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The
Pennsylvania Medical
Journal

REPRESENTING

The Transactions of the Medical Society of the State of Pennsylvania at its Annual Session, held at Bedford Springs, September, 1906.

ORGANIZED 1848
1847
CHARTERED 1890

VOLUME XXXVI.
[VOLUME X OF THE JOURNAL.]

CYRUS LEE STEVENS, A. M., M. D.,
Editor and Publisher.

ATHENS:
W. G. JORDAN PRESS,
1907.

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The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X. No. 1. | Athens, October, 1906. | Subscription: $2.00 Per Year.

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Addresses.

ADDRESS OF THE PRESIDENT: DUTIES AND ADVANCES OF THE MEDICAL PROFESSION.

BY WILLIAM H. HARTZELL, M. D.,
Allentown.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The Medical Society of the State of Pennsylvania begins its fifty-sixth annual session to-day. After an interval of nineteen years, we again meet at this renowned place of Bedford Springs in the southern part of our state. When we stop for a moment and recall that our membership then was only about eight hundred and now almost forty-five hundred, we may well feel proud for the progress in numbers. But the medical profession is to be more especially congratulated on the evidences of a useful organization; however, much remains to be done. A lack of unity has prevented many realizations of hope, and if we are to gain and maintain that preeminent position to which we are entitled, we must continue to unite for the common good of all its members.

Men of all times, men of all countries, men of all languages, have toiled in this great work of laying broad and deep the foundations of our profession, and as the superstructure has passed on from century to century, gathering strength in its rise, accumulating facts and observations, products of great minds and all ages, it now has a history and name which knows no superior. How, then, can we maintain and further this noble prestige which has been the product of ages, and handed us by our forefathers? The answer is very simple; the time has come when we must take the public into our confidence, we must enlighten the people, for with them always lies the last word.

Relation of the Medical Profession with the Public. On this thought we need but dwell a moment to see how wonderfully well the public grasped the subject of hygiene and sanitation. It is true there are still some districts and localities where isolation and disinfection are still resisted, but there are also still some districts and localities where antivaccination and Eddyism flourish. But in a general way the public sees plainly the importance of proper water supply, pure foods, the danger of contamination in all contagious diseases, the prevention of tuberculosis, in the proportion as our profession demonstrated the same and educated the public. This we must continue to do with increased vigor and skill, and, as an authoritative organization, our State Health Department deserves our united support on this subject. How much it has done to disseminate such important knowledge on the spreading of tuberculosis, how many useful lives have been saved, and how many afflicted ones have been restored to health and usefulness, no one can definitely tell. But this we can say, that it was the noble spirit of our unselfish profession that aroused and instructed the public without the expectation of fee or the hope of reward. And I most sincerely hope that we may have an intelligent committee in every school district within the length and breadth of our commonwealth to enlighten the public with lectures and literature, to promulgate measures for the relief and control of tuberculosis.

But, if we had succeeded, or may at any future time succeed in stamping out this "white plague" so that our state would see no more of it than it does of yellow fever, our labors could not relax, and our duties to the public would still be as pressing, in teaching them the importance of a pure water supply, and elimination of typhoid fever.

Taylor states that fifteen thousand people in the United States die annually of typhoid perforation alone, and, further, that the half of them could be saved if any early diagnosis was made and an early operation was done. In this connection it is astonishing to note that no more than three hundred and fifty-two such operations had been reported from the surgery of all time up to 1903. The conclusion on this point is self-evident. But typhoid perforation, hemorrhage and all complications will least concern us when we have eliminated the disease from the state, and that can only come when we have interested and correctly informed our public spirited men, prominent people, statesmen, politicians, ministers and ladies, that we must prohibit the pollution of streams, insist on a pure water supply and the proper care of all sporadic cases.

Impositions. That the medical profession is frequently imposed upon is the unanimous consent of every member who has practiced only a few years, and quite a good deal of this imposition is invited, for, when he has graduated, the parting address by members of the faculty is to advise him to attend the poor faithfully and kindly, for, "over the shoulders of the poor they were to creep into the pockets of the rich"; "The Poor ye have always with you," sounds both poetical and biblical, and when a proper discrimination is made between the worthy and unworthy, the just and unjust, it merits our heartiest commendation. But when a lady drives to within a square of a hospital dispensary with her own team, throws her sealskin coat in the carriage, walks in the waiting room with her poorest dress, pleads poverty, and receives a careful examination or medicine. departs with a cold "God bless you," and then boasts how to impose on the doctor, this may be considered rank imposition; and yet a great many hospitals and most dispensaries have been continually doing this. The correction rests upon their shoulders, we need only call their attention to it.

Another invited imposition is the carelessness of many physicians in collecting their accounts and rendering their bills. Very few physicians become rich practicing their profession exclusively, because the successful men are so deeply engrossed in its literature, the reading of new books and journals, the care and anxiety of their patients, that every minute of their time is taken up, and when a few moments or hours do occur, they need them for rest and recreation, and the financial end of their life is so seriously neglected that quite a portion of their hard earned remuneration is lost.

They should render monthly statements just as any successful merchant does, and the profession as a whole would profit thereby. This is not professional commercialism.

Contracts. The contracts between physicians and lodges, casualty or accident companies, and corporations are now properly condemned by the various medical associations all over the country, and in a few localities have been made prohibitory by local organizations. This, I hope will be taken up by all of the county societies, and the proper remedy offered for the evil. I am told that, by joining the "Fraternal Order of Eagles" and other kindred organizations, a man is guaranteed all the medical services needed for himself and family during a whole year for the sum of three dollars. Casualty companies and others may pay double that amount, but any physician who has joined our noble ranks and so basely humiliates and degrades our profession, should be proscribed, and the rest of the physicians refuse to have any professional intercourse with him in all cases.

"It is a matter of professional pride, that, in the general condemnation of the life insurance companies, although every other part of the control has been shown to be corrupt, no breath of scandal has touched the medical department'' (Mayo). In life insurance, the intelligent and careful physician is the trusted sentinel that guards the portals, protects and defends their very existence, and, as a recognition of their fidelity, several large stock companies have reduced the medical examiner's fee forty per cent., if for no other reason, so that their fund might be enlarged in order to corrupt legislatures, bribe officials, or make the officers comfortable at Lakewood, while suffering from nervous prostration.

Advances. The advances in our profession during the year have been all along the line of its different departments, rather than in any one direction or any one particular branch.

It is now a good many years since dropsy was eliminated from the rôle of diseases and considered only a symptom; within the last year the same thing has happened to jaundice, and justly so. The terms indigestion and dyspepsia are fast becoming things of the past, conveying nothing to the mind of the thinking physician because he is well aware that they are merely expressions of a symptom of one of a large number of affections. If we pause a few moments and devote them to a consideration of some of the recent advances, as they occurred in the current literature during the year on diseases of the stomach, we are forcibly impressed with this fact, that there is no organ in the body which requires more careful investigation than does the stomach in the effort to arrive at a definite diagnosis. The number of symptoms directly referable to the stomach are very few in number, and any or all of them may occur in each of the different diseases of the organ. And patients manifesting indentically the same symptom may have different pathological conditions. The evolutionist maintains, and properly so, that the functions of the stomach have varied with the evolution of the animal from the lower to the higher forms according to the character of food obtainable or used. This has been best illustrated in man by the Baron Takaki lectures on the physical and intellectual development of the Japanese. A careful ''when and what'' you put in the stomach has not only advanced the ''Flowery Kingdom'' to one of the ruling nations of the world, but would prevent many a suffering which we used to call indigestion and dyspepsia.

There is certainly no subject in medical literature that lies within the domains of internal medicine, that has received greater attention than has that of ulcer of the stomach. And while no epoch making results have been obtained in the last year, many links have been added to the chain that will make ultimately for the perfection both of the diagnosis and treatment of this unusually interesting condition. The bismuth and x-ray examination in locating and obtaining the size of the ulcer can be admitted as important advances of the year.

Surgery. If any leading tendency can be said to have developed in the past year, it is that the trend of surgery has been away from the purely anatomic and towards the physiologic. It is universally recognized that surgery along purely mechanical lines has reached its highest development in Europe with Kocher and Milkulicz, in England with Moynihan and Robson, and in America with the Mayos. While, from a purely physiological standpoint, Crile and Cushing may be said to lead in this endeavor, their especial productions are too well known to need any extended remarks from me. And if the surgery of the future realizes what they seem to have reasons to expect, we are sure to note advances no less startling than those which succeeded the advent of anesthetics and antiseptics.

Within a comparatively few years, surgery advances have compelled the internist to hand over bodily the appendix and gall bladder, admit that jaundice is no longer a disease but only a symptom, and malignant affection of the stomach amendable to a cure in a large percentage of cases. At the present time the great majority of intelligent physicians recognize and admit that these conditions belong to the surgeon rather than to the practitioner of internal medicine, and the acrimonious controversy which extended over many years has ceased.

In the development of the surgery of both the appendix and gall bladder, the same sequence of events has been observed. First, the surgeon was called on to operate in the fatal, terminal complications of the disease. His operation was frequently followed by a high mortality and much adverse criticism. Later, he was called at an earlier period to relieve suffering and avoid fatal complications. He then had a lower death rate and less hostile criticism. And finally when the pathology of these diseases was better understood, and earlier diagnoses were made, he was called to operate in the earliest stage, or, when the disease was still quiescent, with a view to avoid future trouble; and thus he obtained the best possible results, insignificant mortality, and the hearty approval of his medical colleagues. This ideal state of affairs is possible only when the general medical public has been convinced that early prophylactic operations in these surgical conditions give the patient the best chance of life and future health. In certain conditions of the stomach and duodenum, the treatment has already been settled by the almost unanimous agreement of the profession. Practically all medical men will admit, that acute perforative lesions of the stomach, duodenum, and typhoid ulcer call for immediate surgical treatment. It is also generally admitted that primary hemorrhage from acute gastric and duodenal ulcer, no matter how copious or exhausting, is best treated by no operative methods or drugs, but when frequently repeated hemorrhages occur that threaten the life of the individual, operations are demanded. It is, therefore, quite apparent that the greatest advances made were those in surgery of the gall bladder, cancer of the stomach, benign pyloric stenosis, and gastric and duodenal ulcers; while Mayo's description of his surgical procedure in the saddle ulcer of the lesser curvature is certainly an instance of profound mechanical dexterity, and unparalleled surgical brilliancy.

Diagnosis. The new diagnostic methods brought forward in the course of the past year have been so numerous that it has been found impossible to cover adequately the entire field in the compass of such an address. It would, therefore, seem better not to take up the methods of physical diagnosis, which, if discussed at all, must be described in full and with great detail. We will, therefore, discuss only laboratory diagnosis which relates directly to internal medicine.

One of the most important contributions to urinology during the year was that by Dr. Cabot of Boston, as the result of the comparison of the postmortem findings and the clinical records at the Massachusetts General Hospital for the period of twelve years. He first went over the postmortem records, noting the cases in which kidney lesions were found, and comparing these findings with the result of urine analysis made during life. He then took the cases in which normal kidneys were found and looked to see whether the clinical records showed normal urine. The results were astonishing, as both urine analysis and postmortem diagnosis can not be ridiculed at that institution. His conclusions are, perhaps, somewhat radical, as he believes that, in the vast majority of cases, the estimation of urinary solids are a waste of time, that the attempt to diagnose the anatomic condition of the kidneys by measurement of albumin and the search for casts is fallacious in the extreme, and that the most reliable data about the urine are those most simply and quickly obtained,—the twenty-four quantity, the specific gravity and the color.

Miles's modification of the turpentine-guaiac test for blood in the urine has been very favorably commented upon as it gives a clearly cut reaction, and is more delicate than the simple guaiac or peroxid of hydrogen tests.

The improvement in the technic of the Widal test for typhoid fever was hailed with much pleasure by the internist. It has become more and more clear that it is not necessary to work with live cultures of the typhoid bacillus, but that perfectly good results can be obtained either with cultures killed by the addition of formalin or with suspensions of comminuted bacilli, such as "Ficker's solution" prepared by Merck. The latter especially seems to be growing in favor, and enables every physician to perform his own agglutination tests.

Therapeutics. In therapeutics within the last few years several interesting methods in solving the problem of immunizing against tuberculosis have been proposed; and, while no definite results have as yet been obtained, it is earnestly hoped that their labors may eventually succeed and we may immunize against tuberculosis as effectually as we now do against smallpox.

The intraneural injection of tetanus antitoxin, the intravenous injections of sodium salicylate, digitalis, and potassium iodid in acute rheumatic fever, as well as the *x*-ray treatment in leukemia and Addison's disease, speak well for the activity of this branch. But the most important advance of therapeutics, in America at least, has undoubtedly been the general discussion and agitation against the American evil of nostrum vending; while we regret to say it was not consummated by the medical profession, it is, nevertheless, for our benefit, and we bow most profoundly to those journals who so successfully unearthed the methods and propaganda of the nostrum vender. I also regret to say that most of the newspapers of the United States are under the complete control of these people by virtue of a contract which prohibits any adverse criticisms, editorially or otherwise, on the part of the newspaper or its contributors and also serves as a cudgel by which these people can be made to throw all their influence against adverse legislation in regard to patent medicines.

The medical press as a whole has not manifested great enthusiasm in support of the attitude of the American Medical Association and its Council on Pharmacy and Chemistry, and we hope this position is not to be construed as an opposition to the movement toward bettering these conditions.

In the other branches of our noble profession great minds have been laboring continuously and heroically to advance the cause and have succeeded as equally as those I have enumerated; yet they can not be measured, because there is no standard of comparison. To realize that we have devoted ourselves to the most holy of all callings, and, without the thought of reward, have alleviated the suffering of the sick and afflicted and added length, usefulness and happiness to human life, produces a consciousness that can only be compared to the compassionate neighbor, for to both, the haughty spirit of the priest and the skulking, cowardly action of the Levite are alike contemptible, but the noble spirit of the Samaritan, which is the spirit of our profession, touches a chord deep down within our souls and we stand erect, intent upon noble deeds.

Well has the poet said:

"God's noble craft, physicians,
Your work is one divine;
For o'er your healing missions

Does Heaven's mercy shine.
Then think not of your mission
As naught but toils and plods,
For, like the Great Physician,
Your work is one with God's."

ORATION ON STATE MEDICINE.

BY SAMUEL G. DIXON, M. D.,
Commissioner of Health, Pennsylvania,
Ardmore.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

I am here to-day to talk over with you the great work of protecting the health of our people in Pennsylvania. The program says I am to deliver an oration. From that you will have to excuse me unless we agree that the truest and most telling oratory is often just a simple heart to heart talk, a plain matter of fact statement of the conditions that the speaker wishes to present.

Before taking up the work of the new State Department of Health I want to thank your society for the privilege of talking with you all here together. I think it means more to me than to my professional colleagues who have been taking part in your deliberations. The ideas and experiences that they bring to you are for your benefit especially. They are giving more than they get by their communications. On the other hand, to make a frank confession, I am seeking help. The deepest theme in my talk to-day, the chief object of telling you all about what we are doing and what we hope to do, will be the cementing of ties that bind you to the protecting of public health and of securing your coöperation more completely than ever in the special work that I am now attempting along this line. If I can do this I shall go back to my work with renewed courage and abundantly increased strength.

I want at the outset, also, in behalf of the present forces who are engaged in advancing sanitation in Pennsylvania, to render the tribute due to the forces that were at work for so many years. They were years of the hardest kind of fighting, the kind of fighting that completely discourages the ordinary warrior because of the almost complete lack of support and appreciation of the battle. But the old champions of public health in our state were not the ordinary sort. They knew no defeat, and with the people's welfare as a light burning in the long stretch of darkness ahead, they battled toward that guiding star, unmindful of self, undisturbed by indifference, undaunted by all obstacles, and winning successes that only those who follow after can appreciate. And so I say that at the start I wish to pay tribute to the noble work done by Dr. Benjamin Lee and the State Board of Health and you gentlemen who have stood by that work for twenty years past.

I am going to take it for granted that you are generally familiar with the provisions of the health laws enacted by the Legislature of 1905, perhaps the most comprehensive health legislation that any state in the Union has ever put in force. I refer to the act creating the new State Department of Health, also the act that charges this department with the preserving of the purity of the waters of the state, and the act under which the Bureau of Vital Statistics of the Department of Health is established and given power and facilities for collecting uniform birth and death records from every part of the state.

The present head of the department had the honor to receive his commission from His Excellency the Governor on June 6, 1905, a little over a year ago. He got to work that day. There was no chance to do otherwise even if he had been inclined to sit down and think it over for a while. You who have been engaged in public health work know all about this. You appreciate the emergency cases that arise every day and have to be met the same day. We have been sticking at it hard ever since. When I say *we*, I mean a staff of faithful, enthusiastic, capable assistants, who only look at the clock when the work of the day is finished to the public's best interest. I think that I am justified in saying that this work has told. We have a great deal of new machinery all built and running smoothly, and are completing more.

In attempting to outline to this society what the Health Department of Pennsylvania has accomplished in the first year of its existence, and what it hopes to accomplish in the near future, it may not be inappropriate to consider for a moment the extent of the territory embraced within its jurisdiction and the natural obstacles of geographical and social character that are met with in instituting a comprehensive and systematic work for the proper protection of the public health from every possible standpoint.

The field of observation of every practicing physician is more or less limited to the area included in his immediate field of labor, and, while he is afforded abundant opportunity for familiarizing himself with the shortcomings and needs of that particular district, he perhaps does not fully appreciate the extent to which these conditions are multiplied throughout the entire state.

Pennsylvania has an area of 44,985 square miles, and contains 30 cities, 849 boroughs, 67 counties and 1547 townships, a total of 2426 separate and distinct municipalities which must be considered individually in all public health work. The total population estimated for 1906 is 6,884,388, of which 4,447,586 are included within the limits of incorporated cities and boroughs, and 2,436,802 reside in rural districts.

In cities and boroughs provision has been made by legislative enactment for the appointment of boards of health with abundant powers for the protection of the public health, but in at least four hundred boroughs, or about fifty per cent., either no board of health has heretofore existed, or one has existed in name only. In the 1547 townships absolutely no permanent health organization has been provided for, so that at the date of the creation of the Department of Health one year ago, at least one half of the people in our state, or about three and a half millions, were without any permanent local protection to life or health. To properly safeguard these people and provide for their protection was one of the first efforts of the Department of Health, and in order that this might be done more effectually, the department keeps in close touch and coöperates with all the municipalities which have boards of health of their own.

On the theory that every effect has a definite cause, it immediately became necessary, in order that the proper restrictive measures might be applied to all communicable diseases, that the department should know immediately of the existence of all such diseases. To accomplish this end the rule and regulation with which you are all familiar was adopted, providing for the immediate report to the department of all such cases located in the rural districts, and to boards of health of all such cases located within boroughs and cities, and the weekly report by the boards of health of the same to the department.

At the same time the organization of boards of health, where none existed, has been insisted upon and every effort has been made to stimulate into activity those boards whose work has been neglected. This work has been of necessity both educational and compulsory, but the responses in the comparatively short time in which it has been in operation are extremely gratifying and reflect great credit upon the members of the medical profession upon whom we must rely for them. The report cards and blanks for these reports were distributed during October, 1905, and disregarding the reports received for the fractional part of that month, a total of 71,254 cases of communicable diseases was reported for the nine months ending August 1, 1906, an average of 7917 per month. A daily report sheet is made of all rural cases: and following this, advisory and precautionary circulars are addressed to the householders concerning the sanitary management of the cases of typhoid fever, scarlet fever, diphtheria and the other communicable diseases.

In these circulars of instruction the department has tried to get in touch with the people and talk at close range to them about how they can help themselves and protect others. In our fight against typhoid fever, to take one example, we have felt it all important to drive home the necessity of disinfecting the discharges of the patient before they are taken from the sick room. "Death in the bed-pan." That's one of our typhoid campaign slogans, and with the coöperation of local boards of health we are trying to send the message to every typhoid stricken home in the state.

It is the intention of the department in the very near future to provide health officers for all the townships, whose duty it will be, acting directly under the State Department of Health and its county medical inspectors, to clean up and keep clean their particular townships. In accomplishing this work the health officer will placard immediately upon notice of a communicable disease being given him by the physician; he will see that quarantine regulations are properly enforced and will attend to the disinfecting of premises. The health officer will be expected to report promptly any menace to health that comes within his notice, and he will not be deemed an efficient health officer unless he does notice them.

This small army of men will have a big work before it, and one of the first things that will be told each health officer as he puts on the badge of the department will be that he is expected to work in complete harmony with the physician. I take this opportunity of bespeaking for these men, who will soon be at work, your valuable support and assistance.

There is another little army of men at work for the department and with them you are acquainted. I refer to our five hundred and odd diphtheria antitoxin distributors, who upon your application furnish the state packages of serum for the use of those who can not afford to pay for it. This great work of distributing antitoxin free to the poor has been going on for a number of months, and, as I am sure you will all testify, has been attended by most gratifying results. Here again, in addition to giving credit to our distributors we must recognize the large part of the success for which the physician's aid is responsible. The low death rate from diphtheria, as shown in the clinical reports that you physicians mail to our department after treating the poor with the state's free antitoxin, averaging as it does, about eight per cent., is one of the most encouraging features of our work. From these clinical reports we will tabulate statistics that must necessarily be of value to the medical world.

The collection of birth and death statistics began January 1, 1906. During the six months ending July 1, a total of 60,839 death certificates and 71,596 birth certificates has been received. The degree of accuracy represented by these returns may perhaps be better appreciated from the fact that in July the United States Census Office detailed their chief statistician to make an examination of the methods and results obtained in our Bureau of Vital Statistics. As a result of the report based upon this examination the director of the census under date of July 13 announced that Pennsylvania would be immediately included in the registration area of the United States Census. In making this announcement the director of the census writes as follows: "I cordially congratulate you upon the great work you have done in organizing the registration system of Pennsylvania, and I am highly gratified that it is possible at this early date to increase the registration area by the addition of so important a commonwealth."

When it is considered that Pennsylvania has never heretofore been recognized in the United States Census reports and that during the period of thirty years covered by these reports, that but ten states have been so recognized, the result achieved in the initial year of our work in this respect may be viewed with a somewhat pardonable pride. The result has not been achieved alone in our central office, but in a great measure is due to the careful and painstaking efforts on the part of our nine hundred and sixty-nine local registrars, many of whom are physicians, and upon our medical men in general in their efforts to supply clear and concise certificates of death.

Aside from the immense statistical and sanitary value derived from the systematic collection of the causes of deaths, a condition has been revealed that should call for an immediate remedy. I refer to the deaths resulting from the carelessness and ignorance of midwives. At the present time there is not in Pennsylvania any general act of assembly establishing any qualifications for the practice of this art, with the result that the lives of very many mothers and children are ruthlessly sacrificed. Physicians are required to equip themselves for the practice of their profession by long study in reputable medical colleges and after their successful graduation to pass an examination at the hands of officials appointed by the state, and yet the woman in travail may remain at the mercy of a so-called midwife entirely void of any qualification whatever. An earnest effort will be made to remedy this evil and this society might well loan its influence to this end.

The marriages performed throughout the state are being collected in a systematic manner. Transcripts are secured from the records of the various county courts, and the age, nativity, occupation, and locality of the contracting persons will be made subjects of a careful statistical analysis.

Of course, no department of health can be looked upon as properly equipped which is without hygienic laboratories. The necessity for a proper provision of this nature has been much on my mind. No especial fund, however, had been set apart by the legislature for this purpose, and the erection and installment of buildings of this kind, commensurate with the needs of this great commonwealth and in accordance with the requirements of modern science, would entail an expense too great to be met out of the appropriation for the daily routine work of the department. The constant applications, however, from physicians, local boards of health, and municipal officials, for analyses and tests of various kinds, made the matter a most pressing one and the cause of much anxious thought until the problem was solved in the most unexpected and gratifying manner by the offer from the provost and trustees of the University of Pennsylvania of ample accommodations for the laboratory work of the department in the magnificent new medical laboratories of that institution. Commissions have already been issued for the principal officers of this division, and we are looking forward to having it in active working order during the coming autumn. Not only shall we then be able to render physicians prompt aid in diagnosing by chemical, microscopic, and bacteriologic tests, and in determining the purity of water and milk supplies, but also to carry on original research work.

I want now to call your attention to a field of our work, the magnitude of which we are just beginning to understand; that is, the achievement through our sanitary engineers, of the duty that the Purity of Water Act laid upon the new Department of Health. To stop the pollutions of the waters of the state and reclaim them, as nearly as possible, to their virgin purity—this is a work fraught with obstacles and yet so important to the health of our people that it invites our most earnest efforts.

I need not picture to you the conditions that have existed in Pennsylvania; the individual householder constructing an overhanging privy and polluting the small stream that finds its way past his property; the small town defiling with raw sewage a stream of water that is expected to quench the thirst of villagers not far away; the large municipalities discharging the contents of their extensive sewers into the river that is the water supply for thousands and thousands of human beings further down stream. As this has been going on for generations I need not tell you that it is not the work of a day or a year to stop it; but stop it we must, and in this great work already public sentiment is coming to our aid. The people are beginning to appreciate that a sanitary method of sewage disposal is not costly compared with the money outlay that typhoid fever demands in our state every year, not to speak of the awful harvest of misery, suffering, and death that it reaps.

When a municipality desires to extend its sewer system, it must, under the present law, secure a permit from the commissioner of health, who is authorized to grant such permit only after the governor and attorney general have agreed with him that in issuing it, the public health will be safeguarded. This means that the department engineers must make a careful study of the localities in which it is proposed to build the new sewers. After so doing the Department of Health is in a position to advise with the municipality as to the most economical and efficient method of sewage disposal, and this without interfering in any way with the business of the private sanitary engineer who draws up the plans and is in immediate charge of the work. It is a matter of record that the department has saved and is saving municipalities thousands and thousands of dollars by this coöperation.

Of course we will meet opposition in some quarters, and it will be necessary to bring to bear upon a borough or city here and there the full power that the law, in its determination to protect the public health, gives to the commissioner. But so far we have found that the municipalities which were not amenable to reason and could not be convinced that their welfare was inseparable from the safety we asked them to assure their down stream neighbors, are few and far between.

Then as to water companies which are required to secure a permit from the Department of Health before they extend their systems or take a new source of supply. We have had little if any difficulty thus far in securing their coöperation, and we anticipate none, for the Department of Health is materially aiding the private and municipal corporations whose business it is to supply the people with pure water. We have already cleaned up hundreds and hundreds of stream polluting nuisances along the water sheds of the state, and when our army of health officers is organized and at work, the water companies will reap a large benefit from the labors of these men. We are, therefore, working with the water companies and thus command their support in the efforts we are making to safeguard the public health.

So it has been that, when the state's health officials have been obliged to take charge of a municipality's fight against a typhoid fever epidemic, we have usually been able without compulsion to get the water companies to shoulder their part of the burden in locating and abating the source of infection. And I take the opportunity at this point of commending the prompt and efficient manner in which our medical inspectors in the different counties have handled these and other outbreaks of disease.

And now just a word, before I close, about vaccination, for I know that after all that has been said and printed upon this subject in the past year in Pennsylvania you will expect me to say something to-day. A year ago the department called attention to a health law which had been on our statute books since 1895, and which provides that unvaccinated children could not be admitted to school. You know the excitement that followed. I was accused of breaking up our public schools and condemned in the bitterest language by the antivaccinationists and those under their influence. I suppose some men get hardened to criticism. I confess I do not. It grieved me to find that in simply trying to do my duty I could bring down upon my head such a storm of abuse from my own fellow citizens in Pennsylvania.

The department engaged in a vigorous campaign of education. We did everything possible to break down prejudice and to win the people by reason and instruction. I believe we have met with a large measure of success. Hundreds of thousands of children in Pennsylvania have been made immune against the ravages of smallpox by vaccination. The Supreme Court of Pennsylvania has not only reaffirmed the law, but the opinion itself is one of the strongest arguments of which I know in favor of the vaccination of school children.

I feel sure that each and every one of you will assist me in the effort to convince every mother and father in Pennsylvania of what it means to their children to be vaccinated. Surely right must win, and coming to realize that it is you and I, and not the antivaccination charlatans, who are their true friends, these parents will come over to the side of proven scientific truth.

In conclusion, allow me to express my growing sense of the importance of these annual occasions of personal interchange of thought on matters pertaining to the welfare of our profession. Having just returned from a similar gathering across the border in the Dominion of Canada where it was my privilege to meet and speak before many of our brethren in Great Britain, whose names are familiar to us, I have brought back with me an increased enthusiasm for the solidarity of the medical fraternity not only among English speaking people, but all over the world.

Every physician may be a center of illumination and a power for good in his own immediate neighborhood, but it is only by association such as we are engaged in, that we can make our influence felt on matters which concern the public welfare, and which we alone are competent to deal with. It is here that we can demonstrate that, while of necessity each must exert himself to advance that especial department of medicine which he has elected to practice, we can rise above purely selfish considerations and devote our energies to the public good even though it be, as it often is, to our individual detriment. It is in such coöperative effort in the line of the prevention of disease and suffering that I invite you one and all to be colaborers with me.

Give us courage and gayety and the quiet mind. Give us to awake with smiles. Give us to labor smiling. Give us health, food, bright weather, and light hearts.—Robert Louis Stevenson.

Multiplicity of tumors of the breast usually speaks against carcinoma.—*American Journal of Surgery.*

Original Articles.

THE TRAINED NURSE IN THE PUBLIC SCHOOLS, AS A FACTOR IN THE EDUCATION OF THE CHILDREN.

BY S. W. NEWMAYER, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Medical inspection in the public schools is not a new or modern innovation. As early as 1843, in Paris, the public schools were required to have a physician visit them, to inspect the buildings, and the general health of the children. And even ten years previous to this, a crude inspection was practiced in the same city. In 1884, a more thorough system of medical inspection, with explicit duties for the physicians, was inaugurated. This same year saw the dawn of the first systematic medical inspection in America, when the city of Boston employed fifty inspectors, each to have charge of a school district. Boston's excellent example was followed in 1895, by Chicago in appointing nine inspectors, each in charge of thirty schools. In New York City, one hundred and forty-five physicians were appointed in March, 1897, to visit the schools daily. Since that time Philadelphia, Hartford, Milwaukee, Salt Lake City, Baltimore, and other cities, have adopted similar inspections.

At first the principal object of the inspections was the detection of unrecognized cases of contagious diseases, by which means it was believed much could be done to prevent their further spread. Since, however, the scope of the work has widened greatly, and the benefits derived therefrom are numerous. For one to appreciate the value of the trained nurse in the public schools and as a factor in the education of the children, I must give a brief résumé of the benefits of medical inspection.

Of no small importance is the sanitary inspection of the public school buildings. About twice a year every school is inspected thoroughly as to its cleanliness, heating, lighting, ventilation, air-space, etc. All defects are entered on a special report, and these are recommended to the Bureau of Education for its consideration.

Cases of contagious disease can not remain long enough in the school room undetected to do much damage. Thus epidemics of scarlet fever, diphtheria, measles, and chicken-pox are prevented. Children who are sick, apparently not sick enough to remain at home, but who ofttimes are in the early stages of a contagion, are excluded, and the harm prevented can never be estimated. Sore throats are immediately cultured, and diphtheria early diagnosed. Discharging ears following recovered cases of scarlet fever or diphtheria, and sometimes as virulent in spreading these diseases as the diseases themselves, are ofttimes detected and children excluded. Every child is personally examined for its vaccination mark, even though it presents a certificate for successful vaccination. This may seem strange, but there were found in the public schools of Philadelphia over three hundred children possessing such certificates from physicians, but who never had a successful vaccination. As the result of a conference between the Bureau of Health and the authorities of the Roman Catholic Church, the parochial schools of Philadelphia were gone over, to examine the vaccinations of the children. Of 36,300 children inspected, 1,700 were found never to have been vaccinated, or whose vaccination marks were of doubtful protective value. It is needless to picture what this means in preventing an epidemic of smallpox. By also having charge of the contagious diseases occurring in his ward, the medical inspector can systematically and closely follow the exclusion from schools and the return of the children from houses containing contagious diseases. There is also less likelihood of having unreported cases of contagious diseases, as in the case of no physician being in attendance on the case. You may think that children suffering from contagious diseases being sent to school occurs only among the poorer, uneducated classes. No, it is no uncommon occurrence in our best schools. It is not only the poor or careless parent that allows a child to undergo the strain of schooling without being in good health, but ofttimes grave defects of vision or hearing, adenoids, etc., are found in the children of the most exacting parents, due to their being unsuspected.

Besides the detection and exclusion of contagious diseases, of no small importance are the recommendations for treatment in all defects of vision, hearing, diseases of the eye, nose, throat, and skin, and orthopedic defects. By the correction of many of these defects, a dull, stupid child is transformed into a bright, keen, intellectual scholar, and the child assured a new and bright life. It has been estimated in most cities where medical inspection is practiced that twenty-five to thirty-five per cent. of school children suffer from defective vision. With medical inspection it is interesting to note the difference in the personal hygiene of the children. Cleanliness is impressed on them, and cases of pediculosis are sought out, and the clean child protected from a neighboring vermin-covered one.

With this résumé of the benefits derived, and a glance at the accompanying statistics of the work accomplished in Philadelphia by the medical inspectors, I desire to go more into detail of the work of that most important adjunct to medical inspection,—the school nurse. Although Philadelphia has fifty medical inspectors, each in charge of a school district, we have but one school nurse. This nurse, Miss Anna L. Stanley, was kindly loaned to the city by The Visiting Nurse Society to show the great value of the trained nurse in this important work. In October, 1903, together with this trained nurse, I was detailed by Dr. Edward Martin, the director of The Bureau of Health and Charities, to begin a systematic medical inspection of one of the down-town schools. A large number of cases of contagious skin diseases, together with several hundred cases of pediculosis were found. Most of these cases were treated by the nurse, and, at the end of four months, remarkable results were shown. The contagious skin diseases were eradicated from this school, and the number of cases of pediculosis were greatly reduced.

In April, 1904, the schools of the fourth section, five in number, were assigned to the nurse. A well-organized system was worked out and closely followed. The nurse visits the schools daily, three in the morning session and two in the afternoon. The medical inspector diagnoses and excludes from the school, cases of contagion, and recommends for treatment children suffering from various ailments. Written instructions as to the disposal of each case, treatment recommended, or whether the case is to be visited by the nurse at its home, are left at the office of the principal. The nurse each day obtains from these offices the instructions. She follows up each case, and sees that the instructions and recommendations of the physician are brought to a speedy and successful termination. In each school a small room is set aside for the work of the nurse. Here she has a drug closet and all necessary supplies. Where necessary she visits the homes of the children to give treatment and instructions and obtain the coöperation of the parents, thereby assuring success and more permanent results. Sometimes circumstances make it necessary for the nurse to personally take a child to the dispensary for treatment. These home and dispensary visits are made after school hours and on Saturdays. There are various problems to be solved in each case, and the nurse invariably finds the remedy. The duties of the school nurse assures success to the work of the medical inspector in improving the health of the school children. She lessens the number of exclusions from the class room for minor contagious diseases. She sees that all excluded cases are placed under treatment as soon as possible so there shall be the least possible loss of time from school and education. She treats those cases which would for various reasons receive no attention at their homes. The medical inspector recognizes and excludes from the school, cases of contagion, and recommends for treatment children suffering from defects that hinder them in their studies. These cases may or may not receive the necessary attention, but, with the nurse, all uncertainty is dispelled.

The nurse can be used during the summer months when there is no school in the lessening of the great mortality rate among infants from summer diarrhea, due mainly to improper care and feeding. Again she can aid materially in the campaign to lessen the number of cases and spread of consumption.

The following is a report of the work of the trained nurse in the schools of the Fourth Section.

	For the year 1905.	From Sept., 1905, to June, 1906.
Schools visited	6	5
Scholars in attendance..	6600	4800
Visits to schools	707	656
Old cases treated......	6692	3863
New cases treated	1708	907
Total number of cases...	8400	4770
Cases cured	993	781
Taken to dispensaries ..	118	49
Visits to dispensaries ...	212	97
Cases treated at homes..	476	342
Visits to homes........	884	533
CASES TREATED AT SCHOOL.		
Pediculosis	578	249
Impetigo	135	98
Ringworm of body	52	30
Ringworm of head	24	6
Eczema	114	85
Conjunctivitis	141	126
Stye	18	4
Corneal ulcer	11	
Discharging ear	2	
Favus	10	2
Pustular dermatitis	9	15
Infected wounds, contusions, etc.	426	113
Miscellaneous	55	55
Defective vision; glasses furnished	133	124

NURSE'S VISITS TO HOMES, FROM SEPTEMBER, 1905, TO JUNE, 1906.

Disease.	No. of cases.	No. of visits.	No. cured.
Defective vision ...	138	172	124 procured glasses
Scabies	8	25	8
Favus	2	19	2
Acute conjunctivitis	5	30	4
Discharging ear ..	4	7	4
Not vaccinated....	12	12	12
Pediculosis	121	143	78
Pustular dermatitis	14	25	14
Uncleanliness	19	27	19
Congenital deformity	1	3	Admitted to Weidner Memorial Home
Ringworm	5	29	5
Improperly nourished	13	22	Proper nourishment obtained

CHILDREN TAKEN TO DISPENSARIES.

Disease.	No. of cases.	No. of visits.
Defective vision	41	63
Favus	2	7
Acute conjunctivitis....	3	14
Scabies	3	13

In explanation of the above report of the work of the trained nurse I submit the following: The percentage of pediculosis existing in these schools when the nurse began work in April, 1904, was thirty per cent. This has since been reduced to eight per cent. Most of these cases were absolute cures, as the disease has not recurred in the same scholars. This is mainly due to the influence at the homes by the nurse. There remain very few cases of ringworm and impetigo, which at first were prevalent in large numbers. Conjunctivitis and corneal ulcers received no attention from the parents, and were treated only after the children were taken in charge by the nurse. They were soon cured and the children able to resume their studies. These cases included several in which corneal ulcer threatened the sight. Weak, anemic children, unable to work or study, due to impoverishment from improper or no food, were visited in their homes and the existing difficulties, whether extreme poverty, sick or drunken parents, corrected. Over two hundred children with bad, defective vision were treated and supplied with necessary glasses only through much persuasion and the persistent efforts of the nurse. This often required many home visits.

The following report shows the effect of the nurse's work on the education of the children, for the term from September, 1905, to June, 1906, Fourth Section.

Number of scholars exempt from examination 2433
Number of scholars nonexempt from examination 2208

RECOMMENDATIONS FOR TREATMENT OF CHILDREN NOT EXCLUDED BUT ATTENDED BY THE NURSE IN THE SCHOOLS.

	Exempt.	Nonexempt.
Defective vision, glasses obtained	101	23
Impetigo	51	42
Ringworm	31	11
Acute conjunctivitis	63	35
Pustular dermatitis	8	0
Pediculosis	230	175
Minor ailments	134	122

In the above statistics, you will notice that the total number of nonexempt scholars in the section, is about forty-seven per cent. But the children suffering from physical defects, not excluded but attended by the nurse at the schools, show a large percentage in favor of the exempt scholars. This is particularly noticeable in the cases of defective vision, furnished with glasses through the efforts of the nurse. Similar results are shown with the other defects.

SUMMARY OF WORK PERFORMED BY THE MEDICAL INSPECTORS IN THE PUBLIC SCHOOLS.

	During 1905.	From Sept., 1905, to June, 1906.
Total number of schools visited...	315	316
Total visits made to schools	51,412	53,344
Total number of pupils sent to inspector	74,524	90,569
Individual examinations	141,303	133,021
Total number of pupils examined ..	215,827	223,590
Pupils excluded	*7,598*	*8,722*
Pupils not excluded but requiring medical aid	*27,481*	*33,283*
Pupils vaccinated..	3,017	3,321

The above reports show the remarkable results of medical inspection. But it requires the trained nurse to lend assurance that the advice given by the physician, in the cases he patiently examines day by day, is not thrown away. She enables the physician to leave at school many cases which would otherwise be excluded and lose time from education. Recommendations for treatment are attended and practical results obtained.

There are about twenty million school children in the public schools of the United States. Surely this is a sufficient population to cause some concern to be taken in regard to their physical condition. At present a small percentage of this vast army is looked after. It is in childhood and school days that the child is more susceptible to the infectious diseases,—scarlet fever, measles, diphtheria, chicken-pox, etc., as likewise the contagious skin diseases. The school room is a great factor in the spread of these contagions.

Education is a necessity. We realize this, and formulate laws for compulsory education, and whether this education is sought or forced, we must offer one free from the danger of contracting disease. Ofttimes a child has physical ailments which would disable him from accepting an education which we desire to force upon him. We should not offer or force a mental education until we have provided a physical capacity to accept such mental strain. The medical inspector has accomplished much, but only with the trained school nurse, and her individual care, personal inquiry, and knowledge of home life, is the highest degree of efficiency in education procured.

DISCUSSION.

Dr. Herbert H. Herbst, Allentown: The question of medical inspection in schools is one which those of us who are interested in the public school system regard more fully than some not so much occupied with these matters. I have been interested for a number of years in school matters, and the many disturbing questions arising between the teacher and parent as to disease preventing children from attending school, certainly offer a field for the work of the medical inspector. Some of these difficulties arise in regard to vaccination and in connection with the compulsory school law. A child may be required to attend school when there may be some condition of disease present that may infect the whole school; a medical inspection, I believe, would satisfy both parent and authorities. Whether or not the expense can be provided for from the school funds is a question not yet settled. We have been trying to ascertain whether the school funds could not be applied for this purpose. There is no question in my mind that, if it could be uniformly arranged throughout the state to have the medical inspector in schools, disease, particularly in the lower grades, could be reduced still lower than the percentage given in the paper. A teacher can be educated to some extent in some of the minor diseases; so we have more trouble regarding vaccination than anything else. The greatest difficulty is where a parent alleges that his child is unfit for vaccination on account of suffering from some chronic disease. We have met this question in a manner by having the child inspected by the teacher and then referred to the authorities. A sworn certificate from the physician as to whether or not the child is unfit for vaccination helps solve the difficulty, but this is not satisfactory, because few physicians are willing to give such certificate. I think the only remedy is to have incorporated in our school acts the fact that there must be a certain system of medical inspection.

Dr. Seneca Egbert, Philadelphia: I am glad to have heard this paper, because, as Dr. Herbst has said, it is one of the most important before us who are all interested in the school population of the country which, as the author says, makes up a very large proportion of our total population. Often the child does not get the proper care at home that he should have, but the trained nurse in the school can follow up each case and secure results such as Dr. Newmayer has indicated.

Another effect not so immediate, but as important, is the educational feature—that is, the education, not only of, and not so much of, the child as of the parent—the emphasizing of the importance of proper sanitation and of medical attention at a time when it is most needed, and the bringing the parents to understand these things as a great many do not now understand them. I think we can wisely develop this work still further than we have done. Of course, it has only been an experiment in Philadelphia, and we have but one nurse employed in this capacity for the city. We should have as many nurses as medical inspectors. Under the new school law there should be enough school funds to supply the extra expense, provided the laws permit it. If they do not, the legislators that meet this coming winter should see to it.

In Indianapolis an interesting feature of the law is that a child not in school for three days must be reported by the school authorities to the Board of Health. The Board of Health then visits the house and makes an inspection. In this way not only the school children are looked after but every one in the house. I appreciate the importance of this paper and feel that it is the announcement of the beginning of a great advance, and that not only medical inspection but the employment of trained nurses in our schools will do much for the education of our children and their parents in hygiene and in sanitation.

Dr. Thomas D. Davis, Pittsburg: Sometimes when our thoughts are turned to the sanitary side of this question we forget the educational side. For over twenty years I have been a school director in one of the large wards of our city, and I know something of the interference with the education of a child by sanitation regulations. Take, for instance, a case of contagion; none of the children in the home of the patient are allowed to attend our schools for thirty days after convalescence, which means possibly two months of a school year lost, and where there is a large family there may be several cases like this during the school life of a child. Not only does the child lose this time, but when he returns the other scholars' time is lost by the teacher, trying to help the detained one to catch up. By our curriculum a child should graduate from the public schools when he is fourteen years of age, but very few graduate under sixteen or seventeen, on account mostly of the loss of time from sickness and sanitation causes, though the child himself may be perfectly strong and well.

I think every one will agree (except the family physician possibly) that a careful medical examination of the children of our schools, by a competent physician, would be of considerable advantage, but the practical question is how to accomplish medical inspection without interfering with the time for education. If the examination is made only once a year it is of very little value, except, possibly, for the eyes. If it is made every day or every week, a great deal of time must be consumed. In a building having several hundred children, possibly ten or twelve would be sent by the teachers to the medical examiner who comes every day, if it took him five minutes to examine a child the last of the twelve would be just an hour out of the class room; during his absence very important instruction may have been given, which would have to be all repeated when the child is returned, thus wasting the time of the other children in the room. On the other hand if the examination is made outside of school hours, as it should be, then it is difficult to get the children and teachers to attend to it, and you at once come in conflict with the home or the family physician.

There is such a great difference in the social standing of our schools and also of the scholars in the different buildings that all do not need to be examined, yet in the democracy of the public schools all must be treated alike. I am very sure many of our people would resent such examinations of their children and a nurse would be dismissed at the door.

Dr. Myer Solis-Cohen, Philadelphia: Medical inspection certainly must not interfere with education; when it does the fault probably lies in the method rather than in the inspection itself. In Philadelphia when the inspector enters the school, all the children who appear to the teacher to be sick are sent to him in his office. Those found to have contagious diseases are excluded from school; those with noncontagious affections are directed to consult a physician or dispensary. Once a year every child is thoroughly examined; therefore, once each year a well child loses from five to ten minutes of his time for school work.

Doubtless we have laws on our statute books not in accordance with modern views regarding sanitation. By an act of assembly, however, approved April 20, 1905, the Bureau of Health of the city of Philadelphia was given full power to make its own rules and regulations. It at once abolished the rule requiring absence from school for thirty days after complete convalescence and now admits to school a child convalescent from diphtheria the day after the second negative culture has been obtained.

The question whether or not school funds may properly be used for medical inspection raises the question as to whether the inspection should be conducted by the board of health or by the board of education. In Philadelphia it is under the direction of the Board of Health; in New York it is under the Board of Education. I think it is wiser to have the medical inspectors responsible to the health authorities than to the school authorities.

As shown by Dr. Egbert, one of the best results of medical inspection is the education of the children in personal hygiene. As an illustration, two weeks after medical inspection was started every child in the schools began bothering his mother to see that his head was clean, so that it would be in proper condition when seen by the medical inspector.

Dr. Jay F. Schamberg, Philadelphia: I do not think that the difficulties and disadvantages attendant upon medical inspection of schools can be regarded as offsetting the great advantages that are to be derived therefrom. To be sure, personal hardships are often imposed in the exclusion of well children living in the same household with those who are sick. Every law and regulation means the curtailment to a certain extent of personal liberty and privilege, but, if this is for the common good, no proper exception to it can be taken. It has been demonstrated in a practical manner that medical inspection of school children not only tends toward the protection of the health of the pupils but is a powerful factor in preserving the health of the community. During epidemics of measles it is obviously desirable not only to prevent children ill with the disease from attending school, but, likewise, to prevent the attendance of the well children in the family. The latter, on developing the disease, will further spread infection. Over twelve thousand deaths occur every year from measles in the United States, largely from pulmonary complications. The great bulk of the deaths occur in children under two and three years of age. These children of tender years are commonly infected by their brothers and sisters who contract the disease in school. If all children could be protected from measles until the sixth year of life, an enormous saving of lives would result. Careful school inspection can certainly accomplish much in lessening the great mortality from measles. Actual experience has demonstrated the fact that children frequently attend school during the incipient stage of measles, scarlet fever, diphtheria, mumps, whooping cough and other infectious diseases. The early exclusion of such children is, of course, an absolute necessity in order to prevent dissemination of these maladies. It is impossible to bring together a large number of children without leading to the spread of infectious diseases. In large cities, infectious diseases increase immediately upon the beginning of the school term and promptly decrease after the cessation of school sessions in the late spring.

In addition to the diseases referred to there are many contagious diseases of the skin and eyes which should debar children from associating with others. There can be no question that medical Inspection of school children is a matter of great importance and if properly carried out, may be performed with a minimum interference with school duties.

Dr. Daniel W. Jefferis, Chester: I have been for many years deeply interested in schools and connected with them in an official capacity. In the education of children the matter of health should be fully taken into consideration. When I had the honor to be a soldier in the United States Army, the first thing I learned was that a soldier should take care of himself and keep himself in good shape. It seems to me that we might spend a little less money in dispensaries, insane asylums, epileptic institutions, and for the care of the defective, and a little more in preventing defection. I was much pleased with the Doctor's paper, and I think there ought to be a rigid medical inspection of the schools. There is a great advantage, too, in the service of a nurse. I think the children will lose nothing in the way of practical education by the medical inspection plan.

The Philadelphia schools, and, I am sorry to say, the Chester schools to a large extent, are crowded with a lot of studies that never amount to a hill of beans. I have been fighting that sort of thing for years, am still fighting it in our schools, and expect to fight it the rest of my life. The majority of children are only in school four or five years. They have learned a whole lot of things and come out really knowing a great many more things that are not so, than things that are so. They need to know the things that are so, and one of the things important to the child is the care of his own physical condition. That was the important thing with the little Jap,—he had learned to take care of himself and he had his doctors right by him to help him. Their hospitals were not filled with typhoid fever patients as were ours in our late war with Spain. It was a disgrace to the country to have things in that condition. If these young men had been properly trained they would have known better than to drink that contaminated water. I am in favor of everything that can possibly be done to take care of the physical health of the children. I would rather have my boy grow to be strong and vigorous and well than to have him know exactly how far it is from here to the sun or to Mars.

Dr. Frank J. Evans, Chester: In an epidemic of diphtheria last winter, the Delaware County Medical Society instituted a free medical inspection of schools, and physicians generally took charge of the school buildings near their offices. In six weeks we had the infection wiped out. That inspection was made at the suggestion of the medical society and did not cost the board of education anything. It was just as efficient, though not so good financially for the doctors, but doubtless will be in the long run.

Dr. Newmayer, closing: I feel very grateful for the earnest discussion of this important subject. It has made a most fitting closing for my paper. Medical inspection and trained nurses in medical inspection are not a fad or an experiment. They have proven themselves, beyond a doubt, an absolute necessity to an efficient and practical school system. The scholars, instead of losing time from education, are kept in good physical condition, and free from the danger of contracting disease, and the consequent loss of time, possibly for life. Philadelphia, with its system of inspection, has shown that there is no interference with the school time and studies, and has the sincere coöperation and encouragement of the teacher and the parent.

Expense should not be considered,

for a human life is worth much in specie. Philadelphia is now spending six million dollars a year on its schools. Is it not worth a few thousand dollars, to make these millions more effective?

THE SALT-FREE TREATMENT OF EPILEPSY APROPOS OF THIRTY-SEVEN CASES.

BY ALFRED GORDON, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The management of essential epilepsy is a matter of great concern to every one of us. The difficulties we encounter at first in controlling the attacks and then in removing them totally, are at times insurmountable. It is a general experience that even in those cases in which we succeed in increasing the intervals between the attacks, they will, nevertheless, recur now and then. Our impotence in such cases is a well established fact.

However, since physiological chemistry supplied us with data concerning elimination, viz, metabolism before and after attacks, also in the intervals free from convulsions, our views on the pathogenesis of this affection have considerably broadened. The consensus of opinion at present is that the easier the elimination, the better the condition of the digestive tract, the less nitrogenous food is taken in,—the less frequently occur the epileptic attacks. Also, it is commonly observed that, when in the course of treatment with bromids the diet should become neglected, the frequency of individual attacks will again increase. It is, therefore, evident that the chemistry of the epileptic organism is chiefly at fault. Our endeavors are at present in that direction. It is there that we expect to find the explanation of the pathogenesis and the solution of the problem of treatment.

In recent years a new element entered the field of investigation of animal metabolism; viz, NaCl. The rôle it plays in chemical processes of the organism has been demonstrated by competent observers to be very important. Sufficient experimental material and clinical observation have accumulated to show the value of the presence or absence of NaCl in the diet. According to Claude and Villaret (*Société de Biologie*, 30 *Mai*, 1904), introduction of large doses of NaCl in an organism insufficiently fed, increases the act of nutrition, which is manifested by a considerable increase of elimination. When NaCl is removed from the régime, the NaCl of the organism continues to be eliminated, urea diminishes in quantity and phosphoric acid has a tendency to increase.

On the other hand the experiments of Achard, Gaillard and Poisseau (*Société de Biologie*, 24 October, 1903; *Semaine Médicale Juillet*, 1904) prove that retention of urea in the tissues can be accomplished *only* by NaCl, that substances not combined with albuminoids can exist in the tissues only with the aid of NaCl which attracts fluids necessary for their dilution. When the organism is deprived of alimentary salt, it utilizes all chlorid molecules of reserve. The latter taken up by the blood are carried to the kidneys, which eliminate them. It is, therefore, easy to conceive why removal of salt from the diet leads to a discharge from the organism of material not combined with albuminoid substances, such as urea, while phosphorus intimately connected with the nuclei of cells, remains undisturbed. It is, therefore, evident that NaCl plays a capital rôle in the phenomena of osmosis, and this is true not only in its relation to urea, but also to other bodies.

When these important observations on NaCl in normal life were applied to the study of epilepsy, it was found that also in epileptic individuals, dechlorization leads to an amelioration of the general nutrition because the excretion of the products of metabolism is increased, while the constituent principles, such as phosphates, are eliminated in a very small quantity.

Basing myself upon these experimental data, I undertook a series of clinical investigations. I applied these principles to the study of thirty-seven cases of epilepsy. In order to determine the above value of dechlorization, every one of my patients was treated as far as possible in an identical manner. Nitrogenous food and stimulants were absolutely forbidden. The quantity of starchy food was reduced to a minimum. Milk, water, eggs, some vegetables, fruit and bread were the only articles allowed. Bromids were given uniformly with some variations, according to the age of the patient. All the patients were therefore placed in the same conditions. Such a treatment inevitably led to a more or less marked diminution of epileptic seizures.

When this was accomplished, I began my observations òn the withdrawal of salt from the diet. This could be done only gradually, as the patients experienced an aversion for food without salt. Adults were easily convinced of the necessity of this treatment but I encountered great difficulty in dealing with children. Twenty-five adults were entirely deprived of salt, and to the twelve children a minimum of salt was given. The gradual method of withdrawing salt was a decided advantage for my observations. Twenty adults were decidedly benefited. This could be noticed not only when the salt was totally withdrawn, but also when the gradual reduction of it was in operation. The major attacks became less severe, shorter in duration and removed at longer intervals from each other. The maximum ben'efit was obtained when no salt was taken with the food. One patient, a girl of eighteen years of age, who is still under my observation has been without salt for the last nine months and only two seizures have been observed during this period. As the children were more difficult to be managed, the results were less favorable than in adults. Nevertheless, whenever I did succeed in reducing or withdrawing the salt, the results were similar to those in adults.

It was interesting to observe on many occasions that, everything else being equal, indiscretion on the part of some patients, with respect to salt, had its almost immediate echo in the general health, and this would follow in a short time by a seizure. This was so remarkable that one would get the impression that NaCl is a direct exciting cause of epilepsy, but I must add that the same aggravation was noticeable also in indiscretion of diet in general. However, it is well to remember that the salt did play a rôle in the aggravation of the diseased condition.

It has been my practice in a number of cases to withdraw gradually the bromids, when, by the above management, I have succeeded in reducing the number of seizures after the patient had learned to follow the correct diet. It was then interesting to me to determine whether the withdrawal of NaCl had a different effect upon the frequency of epileptic seizures in cases when the organism is under the influence of bromids and when the patient does not take the bromids. With this object in view I withdrew the bromids from some patients and only when the amelioration was marked. A close and prolonged observation led me to this belief that the above mentioned favorable results of dechlorization are especially noticeable when the organism is being bromidized. When the bromids are withdrawn, the dechlorization will continue its beneficial effect, but only for a short period; and, again, prompt amelioration is noticed as soon as the bromids are readministered.

Conclusions. My study of the thirty-seven cases leads me to the following conclusions. Chlorid of sodium undoubtedly plays an important rôle in the chemistry of the organism. The suppression of alimentary salt in the diet of epileptics has a favorable effect on epileptic seizures, inasmuch as it reduces their frequency and their severity. It is of the same value in the treatment of epilepsy as the strict observance of dietetic and hygienic rules. Both factors combined, aid considerably in reducing and controlling the seizures. Reduction or complete removal of NaCl from the diet gives better result while bromids are taken, than while they are not taken. The fact that suppression of alimentary salt puts in action the chlorid molecules of the organism, that the elimination of various products of metabolism such as urea, is *ipso facto* facilitated,—this fact, I say, is highly corroborative, if not absolutely so, of the toxic pathogenesis of epilepsy. That there is a hypertoxic underlying basis has been proved beyond doubt by various investigators. Suffice it to mention among recent writers Jules Voisin, Péron and R. Petit.

An uncomplicated experiment led me to the same conclusion. To some of my patients who happened to have attacks at regular intervals, I administered methylene-blue a few hours before a seizure. During the convulsions the urine which they voided involuntarily, was clear, but the greenish-blue color began to appear after the seizures. This experiment naturally leads to the idea of retention of poisonous material in the organism and to a general intoxication of the tissues. The nervous phenomena of an attack is the consequence of an intoxication which reached its maximum.

The studies on the rôle of NaCl are of great value. Their application to other pathological conditions, as ascites, edemas, cirrhosis of the liver, cardiac and renal diseases, is now well known. It is gratifying to utilize this knowledge in the therapeutics of nervous diseases, in the presence of which, we frequently feel powerless. Dechlorization is certainly not a specific for epilepsy, but adds a new element to our meager neurological armamentarium. It also adds considerable value to our old conception of epilepsy as a disease in which faulty chemical processes play an enormous rôle.

DISCUSSION.

Dr. Guy Hinsdale; Hot Springs, Va.: This interesting and valuable summary of the situation, in regard to the restriction of chlorids in connection with the treatment of epilepsy, suggests to my mind the fact, which has been noted, that chlorid retention is one of the great disadvantages in cases of renal disease. Nephritis is, therefore, not to be treated with anything that tends to store up in the system the chlorids. Renal disease and epilepsy are somewhat allied in that respect, because we are familiar with the convulsions that occur in advanced renal disease, and these form another point of contact between the two affections. In any form of epilepsy we should restrict the chlorids from the food. In using mineral waters in such cases I should choose those having the least chlorid of sodium,—the waters containing sulphate of magnesium or the pure waters like those of Maine and other places which are very pure and which tend to dissolve out of the system some of those salts which after all are injurious. I think this is an important feature, and I therefore corroborate and support what Dr. Gordon has said with reference to the treatment of epilepsy by the withdrawal of salt from the food, and would call attention to the analogous treatment suggested in reference to Bright's disease.

Dr. Gordon, closing: When Dr. Hinsdale was discussing the subject I recalled an article in the *Revue Neurologique* which I read recently upon the treatment of Jacksonian epilepsy in inoperable cases. As is well known, Jacksonian epilepsy is always due to focal disease of the brain. In this article the dechlorization was advocated, the most remarkable results having been observed. The general appearance of the patients, their physical and mental states, were greatly improved by the withdrawal of the salt. While we can not give a mathematically exact explanation of the relation of dechlorization to epilepsy, we, nevertheless, must accept the empirical fact that withdrawal of alimentary salt is beneficial in this obstinate disease.

THE PROPHYLAXIS AND MANAGEMENT OF PROSTITUTION.

BY DENSLOW LEWIS, M. D.,
The Delegate from the Section on Hygiene and Sanitary Science of the American Medical Association, Chicago, Illinois.

(A public address delivered by invitation in the Board of Trade before the Erie County Medical Society, June 11, 1906.)

In presenting this subject for your consideration I offer no apology. Your cordial invitation shows me the interest you feel in this vital question of the day, an interest, I am glad to say, which is shared by all true humanitarians throughout the civilized world. It was not always so. Fourteen years ago when Dr. Ferd. C. Valentine of New York, read a paper on venereal disease before the American Medical Association, one man said that this was a Christian country and the association a Christian association and that no such vile thing as venereal diseases should ever be allowed to come before the Christian American Medical Association.[1] Seven years ago I was invited to speak before the same association on the hygiene of the sexual act. I did so as best I could, although in the preparation of the paper there was but little assistance to be derived from a perusal of medical literature. My distinguished friend, Howard Kelly of Baltimore, did me the honor to say he regretted I had read the paper. He further said: "The discussion of the subject is attended with filth, and we besmirch ourselves by discussing it in public."[2] My paper was refused publication in the *Journal of the American Medical Association*, and another paper on "The Limitation of the Venereal Diseases," presented in 1901 to the St. Paul meeting of the American Medical Association, suffered the same fate.

Times have changed since then. The profession has become educated. The need of publicity regarding the venereal diseases is acknowledged. Two years ago Valentine appeared by invitation before the Conference of State and Provincial Boards of Health of North America and spoke of prostitution in all its phases. He made a profound impression and received a vote of thanks for his contribution. One year ago, at the Portland meeting of the American Medical Association, I was honored by being elected chairman of the Section on Hygiene and Sanitary Science, the section before which my effort of five years ago was rejected. At the recent meeting in Boston, the subjects of venereal prophylaxis and the crimes against woman were considered by some of the most eminent men and women of this country and Europe with, I believe, results that will be productive of the greatest good to the community at large.

Even Howard Kelly believes in publicity now. At all events he has recently written about the social evil and the regulation of prostitution.[3] If he is still afraid of being "besmirched" he is courageous enough to disregard any personal contamination in his desire to express his views on the subject.

His recommendations have little practical value. He says, "My own hope lies solely in God and in prevailing on men to look to Him for grace and strength to do that which they can not of themselves accomplish."[4] If we are going to trust in God and do nothing more, little progress will be made. Faith in God will not prevent the husband with an uncured gonorrhea from infecting his young wife, nor will it preclude syphilitic contamination under favorable conditions. The hope of humanity may not consistently lie solely in God, unless such hope finds expression in active work. The truth regarding contagion must be made known; the danger of infection must be understood; the possibilities must be recognized, and, above all things, the cause must be considered.[5]

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[1] Proceedings of the Nineteenth Annual Conference of State and Provincial Boards of Health of North America, p. 62.

[2] Denslow Lewis: The Gynecologic Consideration of the Sexual Act, p. 20.

[3] Howard A. Kelly: What is the Right Attitude of the Medical Profession toward the Social Evil? *Jour. of the A. M. A.*, Mar. 4, 1905.

[4] Howard A. Kelly: The Regulation of Prostitution. *Jour. of the A. M. A.*, Feb. 10, 1906.

Now what is the underlying cause of prostitution and why does it continue century after century in spite of the most persistent effort to do away with it? Here again false modesty has stood in the way of advancement and has prevented us from acknowledging the truth. We have been able to see only a low, degraded woman. We have recognized her vileness and we have feared her debauching influence. Moreover, as the chief purveyor of venereal disease she has been a menace to our youth and to the married man whom she entices away from wife and home. What wonder that every hand has been raised against her? How natural that an outraged public sentiment should demand her suppression! No punishment is apparently adequate in her case. She soon becomes a drunkard and the victim of drug addiction. A few short years and the end is reached. Disfigured, bloated, and repulsive she is cast out to find refuge only in the vilest dens frequented by polluted negroes and Chinamen. Degraded beyond expression, saturated with disease, consumed by the craze for drink and opium, she suffers indignities that the house-dog would resent. Finally she gives up the struggle. An overdose of morphin, a revolver shot, or a plunge in the water, and the potter's field or the rippling waves hide from view all that was mortal of what was once a woman.

My friends, did it ever occur to you that such an end might be the fate of your daughter or of mine? We shudder at the suggestion. It is preposterous. We say: "My daughter is pure and innocent. She has been reared in a home of culture and refinement. She has no low tastes. She has had the advantages of education. She is devoted to her church work and has not an improper thought. She is different from these low-lived women. It is an insult to mention her name in the same breath." We also declare: "These women are voluptuous beasts, in them is a reversal to primary conditions when polyandry existed; they are degenerates, the slaves of lust and the votaries of passion. By nature they are vile and evil-minded. Why don't they go to work and be decent? No, they prefer fine clothes and a life of ease and debauchery. It is outrageous that such a condition is tolerated for a minute in a respectable community and a Christian country. Let us have done with them. Let us make no compromise with sin. The way to suppress vice is to put it under our feet and crush it out."[6]

It is to show the inconsistency, the injustice, and the folly of such false statements that I have been forced to study this subject. I have been placed where I have seen much of the misery of mankind. I have delivered a girl of twelve years of age. While awaiting her confinement she would sit with the other pregnant women, childishly playing with her doll. I have seen hundreds of illegitimate births among ignorant young working girls. I have beheld others occur in very wealthy and prominent families in different parts of the country. I have seen the results of criminal abortion, and I have known very young children to be the victims of venereal disease. Judge Mack of the Juvenile Court of Chicago tells me there is rarely a session of his court without several cases of this character. If any effective result is to be obtained in the prevention of these deplorable conditions, we must proceed calmly, deliberately, and earnestly to an exposition of the facts and our first duty in regard to these social diseases is to ferret out the cause. Unless this is done there is no hope of radical relief. Denouncement, condemnation, and disgust do not help to solve the problem. Ignorance, indifference, and contempt become real hindrances to a consistent understanding of the situation. The first step in advance has been taken; we favor publicity, we advocate investigation, we believe it is our duty to tell what we know.

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[5] Denslow Lewis: The Limitation of the Venereal Diseases. *Medico-Legal Journal*, June and Sept., 1903.

[6] Denslow Lewis: Obstetric Clinic, p. 78.

The student of life as it is, recognizes in every human being two imperious instincts. The first is self-preservation; the second is self-perpetuation. The individual first seeks to live, then he seeks to make others live. The sexual instinct means the continuance of the race. Did it not exist, the nations would come to an end in one generation. It is a God-given attribute of man and its purpose is noble and altruistic. If the world is to continue, new beings must be born, and they in turn must fulfill the universal law as their ancestors have done. Here is a fact in physiology and a law which we admit is immutable.

A thoughtful study of the sexual instinct in man shows to what an extent it influences all his actions and becomes an overmastering force in his nature. It makes possible the highest and most important function of which any man or woman is capable. Were it absent, there would be no future to the race, no family life, no civilization. It does not surprise us to learn that our primitive forefathers saw in this universal impulse an evidence of supernatural power and that in the personification or embodiment of creative force they worshipped the phallus which seemed to them to be the great author of life. It need not surprise us now to recognize in this dominating instinct a wonderful power for good, if properly directed, and the most potent influence for evil, if misapplied. It becomes, therefore, our duty to take cognizance of this masterful impulse in every human life, to study its manifestations, to appreciate its perversions, to know how to control it for the good of the individual and the race.

Then I submit, as my first statement in this consideration, that the sexual instinct exists; it can not and should not be abolished. It must remain an overpowering impulse in every human life. It is more fully developed in the male than in the female and for that reason prostitution is possible, and under present conditions is bound to exist for some time to come. If then this sexual instinct is responsible for prostitution, and if it is undesirable as well as impossible to abolish this chief cause of a deplorable condition, it follows, logically I think, that our duty is to tell the truth about this force in our nature and to show that the sexual appetite is not to be indulged indiscriminately. It is necessary very early in life to teach the physiology of the whole body so that the boy may know that nocturnal emissions do not cause imbecility, that the awakening of the sexual instinct indicates approaching virility. The wonderful facts of ovulation and fecundation should be taught as a necessary and important part of the boy's education, and the occasion should be utilized to explain the importance of an uninterrupted development of his nature and the dangers that attend premature indulgence of a function which has for its object the perpetuation of the species. There is also the sentiment of honor and chivalry which every boy should be made to feel toward the young girl. Finally there should be understood the likelihood of conception, the criminality and horror of abortion, the disgrace of illegitimacy and the fearful consequences of venereal infection with its far-reaching effects.[5] If these facts were taught and understood much would be done to prevent the premature exercise of the sexual function which exists for the purpose of procreation and not primarily for self-gratification. Such an education strikes at the great cause of prostitution. It teaches the dignity of virility. It diminishes the demand, and did no demand exist there would be no supply. It is a rational means of prophylaxis and will prove most effective.[7]

The girl must also be taught the truth. Since she is the victim, and since our code of morality vouchsafes her no forgiveness, it is only fair that she should know the danger that confronts her. Did she know the consequences of indiscretion, the possibility not only of conception but also of venereal infection, she would be less compliant when a little kindly sympathy, the offer of a slight addition to her inadequate wages or the benumbing effect of alcohol cause her to forget her caution. It is unjust to condemn when no effort has been made to prevent. It is the man's fault nine times out of ten, when the girl is forced or persuaded to consent. And this initial step is too often the introduction to a life of prostitution. There is but little chance of any other outcome, if the girl's indiscretion is discovered. Other women look on her with horror and admit no extenuating circumstance. The one false step is enough, if it is found out. There is no possibility of forgiveness; she is for all time an outcast and her only refuge in most instances is the house of prostitution. Once there, she must earn her living, she must do as her patrons insist.

With this understanding of the etiology of prostitution, with a knowledge of the insistent demand for expression of the sexual instinct on the part of the man, and the ignorance, carelessness, poverty, or vanity on the part of the girl, we see, I think, the value of a rational education and the need of a little true Christian charity. It takes time to realize the necessity of such an education. It is difficult to believe that our daughters need such instruction. We think of them as sweet and modest and innocent. Besides they are our own flesh and blood and we, of course, are eminently respectable and highly moral. They seem to us different from common girls, like our neighbor's, for instance. I tell you, my friends, we are all very much alike. Since any person, unprotected by vaccination, may contract smallpox so any boy or girl may fall a victim of the imperious sexual force in every nature unless fortified by a knowledge of the truth. Moreover, there is nothing low nor vile in such knowledge. It is the most important truth that can be taught. It furnishes a protection against a real danger which may confront any child at any moment. We fail in our duty to our children if we withhold that knowledge which, in an emergency, may alone prove a safeguard and a sure protection.[8]

No medical man can practice for any length of time in public maternities, in charity hospitals, or in our penal institutions without knowing that the ranks of prostitution are recruited very largely either from the unfortunate young girls who have had an illegitimate child, those who have recovered from criminal abortion, or those who have committed some minor offense—that is, who have been in the bridewell for the first time. When set free, what does the future offer to such a girl? You would give her a dollar, perhaps, if her case appealed to you, but you would not want her in your store or family. You would be afraid of her contaminating influence. What is there for such a girl to do? She is disgraced, friendless, and alone. She is disheartened and there is, in most instances, no helping hand held out to her in her hour of need. Moreover she must live, and the procuress is lying in wait for her. What wonder that she takes advantage of this opportunity in order to live!

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[7] Denslow Lewis: Ignorance as a Cause of Disease and Disaster, *Ills. Med. Jour.*, Jan., 1906.

[8] Denslow Lewis: The Need of Publicity Regarding Venereal Diseases. *Med. Record*, June 2, 1906.

I do not assert that every prostitute is made in this way. There are degenerates, but they are in the minority. In most instances, if there is no deplorable circumstance such as I have mentioned, there is ignorance, vanity, or the inability to earn enough; there are almost always conditions which are preventable, and which a wise administration could remedy, and a consistent Christian charity could modify. In addition to these factors which induce the girl to consent, there is, as I have said, the domination of the sexual instinct in the man which creates a demand and which, if properly controlled, would do away with the supply.[9]

With this understanding of how the young girl becomes a prostitute, I can not bring myself to look upon her with scorn. I know she is what she is because some man has made her so. Regardless of what she may be, it was impossible for her to have become what she is without the coöperation of some man. It is unjust then for a man to blame another man's victim. Let him blame the man who made her what she is. Moreover, in the present state of our society, with the man still untamed, still unable to control the sexual instinct, still dominated by the animal part of his nature, it is better for him to gratify his passion with prostitutes than to seduce the young girl or assail the young married woman. Do not misunderstand me. I am not an apologist for the prostitute, neither do I favor prostitution. I believe continence in the male is possible, healthful and most desirable. I favor chastity and decency in both sexes and I advocate, in honor, the strictest interpretation of the marriage vow. Nevertheless the true wife, the noble mother and the ignorant working girl are entitled to our chief consideration and should be the first objects of our protection.

It is a hard matter for the clergy and many noble-minded Christian workers to admit the truth of this statement and it must be acknowledged that many earnest students do not agree with me. It requires very thoughtful study of our civilization and an intimate knowledge of actual conditions and of the human animal, to make us realize the necessity, at the present day, of any sort of compromise. It is said we must not "recognize" sin, nor traffic with vice. I say we must face facts as they are; we must know man as he is. Recognition does not mean sanction or legal approbation; every municipal regulation that restricts individual liberty for the good of the community is a compromise.

If, then, we rely on education and on true religion to teach the man to control his passion, if we look to knowledge of the truth to demonstrate the possibility of continence, the advisability of chastity, and the dignity of virility, if we await the time when, as Howard Kelly says, a faith in God will give men grace and strength. let us also be honest, and admit that in the interval there are certain police regulations which eliminate some objectionable features, and certain hygienic measures which safeguard the health of the community.

Conditions are unlike in different cities and municipal regulations must vary. It is, however, reasonable to assert that the man who visits a prostitute should be able to do so without danger to his life or pocketbook. Moreover, while our educational propaganda is trying to induce the man to exercise control, it is undesirable for the prostitute to be at his elbow endeavoring to induce him to accompany her. For that reason street solicitation is a nuisance and should be suppressed. Neither is it well for the prostitute to reside near our schools or homes. She has the right to live, but it is preferable to have her segregated where she can be found and to restrict her excursions in search of customers. Her dwelling should be sanitary and under police surveillance so that theft, assault and disorder may be prevented.

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[9] Denslow Lewis: The Value of Publicity in Venereal Prophylaxis. *Am. Jour. of Dermatology*, Feb., 1906.

There remains one more important consideration to be examined; namely, the limitation of the venereal diseases. Here again, a knowledge of the facts is of supreme importance and will prove an effective means of prevention. It must be realized that gonorrhea is not a trivial disorder which any druggist can treat. It must be known that its consequences are most disastrous, that it persists when the discharge has ceased, that it can be transmitted to the wife years afterward when the man thinks he is cured. Its effects in the woman should be understood; its relation to pelvic suppuration, infection during the puerperium, and blindness in the new-born child should be explained. The truth should be known about syphilis and its relationship to serious nervous disorders, brain tumor, bone disease, and other far-reaching and remote effects.

In Paris, Brieux, the dramatist, has written plays to teach this lesson, and in many European countries pamphlets free from technical terms, are distributed broadcast The effort is made, wherever men are congregated, to teach the truth. In the United States, the Society of Sanitary and Moral Prophylaxis, organized in New York a year and a half ago, is doing splendid educational work, diffusing knowledge we already possess and studying the economic and medico-sociologic factors that pertain to the etiology of prostitution and venereal infection.

While all this is being done we must still do more, we must seek to limit the spread of venereal disease by providing increased facilities for gratuitous treatment. I will not now consider reglementation. It is an unpopular measure in this country and for that reason need not here be discussed. It is, however, a fact that the prostitute, as a rule, wishes to be free from disease, chiefly, perhaps, because that interferes with her business. If she knows she is going to be thrown out of the house in case she becomes diseased, she will of course try to conceal any undue discharge or local lesion. If she is put on the street when she is diseased, she must live, and it is but natural she should try to make a living in the only way she can. It is the duty of the municipality to provide accommodations for every infected woman where she may receive treatment and remain until she is no longer likely to be a source of contamination. This is a matter of the greatest importance, but in most cities the means of treating venereal diseases are singularly inadequate to the need. Such cases are often classed as skin cases and huddled together in one ward with a common lavatory and toilet. Dispensary and hospital facilities for the investigation of venereal diseases should be multiplied, and infected women should be urged to apply for examination and treatment. They should also know that a discharge from the penis is suspicious and skin lesions may indicate syphilis.

The prostitute should be the recipient of care on the part of the municipality. Few of us are far enough advanced in our philanthropy to appreciate the extent to which she indirectly saves our wives and daughters, and to realize our duty as a matter of justice towards the unfortunate woman. All medical men know that toward the end of her career, which is usually a matter of but a few years, she is almost always diseased. If she ceases to be attractive and is forced to leave the house of prostitution where she is a welcome inmate as long as her youth and beauty produce pecuniary results, it is known that she will ply her vocation clandestinely with fewer hygienic surroundings, and thus become a constantly increasing source of danger to the community. For this reason alone, without considering the question of charity, or of Christian forgiveness as exemplified by Christ himself, it is important to see that some provision is made for her care, so that she is not forced, in order to live, to continue her calling even when she knows she is diseased, or when she can earn a pittance only by bestial and unnatural practices.

These few thoughts regarding prostitution, its prophylaxis and management, I submit for your serious consideration. I do not expect to solve the problem to-night, and I do not assert that my conclusions are correct, although I believe every word I say. I know, however, that the policy of ignoring actual conditions has failed most signally. I believe the hope of the future is in publicity, in the search for the truth, in an appreciation of the dominating force of the sexual instinct, and in an education which shall teach what we know. I believe further that common sense must prevail, and I know that proper instruction and judicious treatment and management will diminish venereal disease and restrict and ultimately control prostitution.

WASTED ENERGY.

If those who "root" at ball-games
  Would "root" as much at work,
With ardor warm imbuing
Each step in wealth pursuing,
There'd oh! be lots more "doing"
  With merchant, cashier, clerk,—
If those who "root" at ball-games
Would "root" as much at work!

—*Four-Track News.*

ABSCESS OF THE BRAIN.[1]

BY WILLIAM G. SPILLER, M. D.,
Professor of Neuropathology and Associate Professor of Neurology in the University of Pennsylvania, Philadelphia.

(Read by invitation before the Allegheny County Medical Society, Pittsburg, May 15, 1906.)

The diagnosis of cerebral abscess depends chiefly upon the signs of some more or less rapidly developing lesion of the brain, with the discovery of a purulent process somewhere in the body, or of a wound of the head. Abscess of the brain without any evidence of pus elsewhere may be extremely difficult to diagnose. The cerebral signs are much the same as those of tumor of the brain. The choked disc may occur in either condition, but is more likely to be intense in tumor and to occur earlier, but I have observed choked disc of high grade in abscess.

The temperature and pulse are likely to be subnormal in abscess, but they may be normal or even above normal, especially if the abscess is complicated by meningitis. We should not depend too much on the condition of the pulse and temperature. The temperature is more likely to rise in the terminal stage of abscess, but a rise may occur at any period and be caused by the primary suppurative process, as a superficial wound or purulent pulmonary disease. The stupor, in my experience, is usually greater in advanced stages of abscess than in tumor, and yet an abscess may be latent or nearly latent a long time, and stupor may be pronounced with brain tumor. It is not uncommon to find slow cerebration preceding stupor in either condition. In many cases the diagnosis must be in doubt, but given a case of long standing, purulent otitis media, and recently developed signs of disease of the temporal lobe or cerebellum, the diagnosis of abscess becomes more positive. High leukocytosis speaks in favor of abscess or purulent meningitis in contrast with tumor. Where the cerebral symptoms appear after a purulent pulmonary process, the diagnosis between tumor and abscess of the brain is difficult. Virchow is said to have been the first to call attention to the frequency of abscess following a purulent affection of the lungs. Still more difficult is the determination as to whether purulent meningitis or brain abscess is present, and often the two conditions are associated in the same person. The diagnosis is important, because less can be hoped for from operation if purulent meningitis develops, whereas operation is demanded if the condition is one of abscess. Lumbar puncture is of great value,[2] as pus in the cerebrospinal fluid obtained by this means points to purulent meningitis; but purulent meningitis may exist although pus in the spinal fluid is not obtained. The presence of mononuclear or polynuclear cells in the cerebrospinal fluid is also of diagnostic value. Kernig's sign is of value as indicating meningitis, but is not pathognomonic and may occur with abscess. Rigidity of the neck is more likely to occur in meningitis, but may occur with abscess. Where abscess is associated with purulent meningitis the prognosis is extremely grave.

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[1] From the Department of Neurology and the Laboratory of Neuropathology in the University of Pennsylvania.

The following case shows how difficult it may be to decide between cerebral abscess and cerebral hemorrhage.

A man, about forty years of age, was admitted to my service at the University Hospital, in an unconscious condition, March 20, 1906. No history was obtained except that he was known to be a chronic alcoholic, and had been unconscious on several occasions. He had been found in a stable and brought from there to the hospital. No signs indicating an injury could be detected.

I examined him March 21. He had conjugate deviation of head and eyes to the left, and paralysis of the right upper and lower limbs. The temperature was above normal, 101 degrees, and on one occasion 103 degrees, until March 26, and remained normal until April 27, when it rose to 101 degrees. It fell again to normal on April 30. I supposed the man had probably had a hemorrhage of the brain. No discharge from the ear was present. He improved somewhat but never spoke. A copious purulent discharge from the left ear began April 28. His condition had improved by this time to such a degree that a more thorough examination could be made. He was still completely paralyzed in his right limbs and right side of face; he had diminished sensation of pain on the right side and had also right hemianopsia. He was evidently word deaf and could not speak. He had a leukocytosis of 16,640. Lumbar puncture allowed 30 c. c. of perfectly clear fluid to be withdrawn, and a smear preparation of the sediment showed no cells. Kernig's sign and rigidity of the neck were not present. Dr. Randall examined the ear and expressed the opinion that the discharge was caused by chronic suppurative otitis media and that it did not contain cerebrospinal fluid. There seemed to be no mastoid involvement.

Dr. Carpenter, in Dr. de Schweinitz's clinic, examined the eyes and reported that the man had bilateral neuroretinitis with hemorrhage. The swelling of the disc was not marked and the fundus disturbance was rather widespread. The veins were very much swollen.

On account of the purulent otitis media, the leukocytosis, the neuroretinitis, the symptoms pointing to a lesion in the left first temporal convolution and extending to the internal capsule, and optic radiations (right hemiplegia, hemihypalgesia, hemianopsia, word deafness), I feared the patient might have a cerebral abscess and requested Dr. Frazier to operate over the left first temporal convolution. A subdural hemorrhage was found in this region. The otitis media and the hemorrhage of the brain were probably the results of trauma. Had there been no otitis media, the opening of the skull probably would not have been made, as the symptoms otherwise seemed to point to an inoperable intracerebral hemorrhage. The patient died two weeks after the operation and a large hemorrhage was found within the left basal ganglia.

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[2] An excellent presentation of lumbar puncture and recently been made by Kopetzky, *American Journal of the Medical Sciences*, April, 1906, p. 648.

Headache and vomiting are common and early signs of abscess or tumor of the brain. Chill is a common symptom of abscess, and likewise is general muscular wasting if the patient lives sufficiently long. Frequent yawning is not uncommon with brain abscess or tumor. I have seen it a number of times, and occurring as it does, when the patient is in marked stupor, it is a striking sign.

As an example of an unusual method of infection of the brain, I mention a case described to me by Dr. B. A. Randall. A man was tossing up an umbrella with his hand, when one of the ribs penetrated the ethmoid bone through the nostril and caused cerebral abscess.

Abscess of the brain or purulent meningitis may readily occur in association with a purulent thrombus of the lateral sinus secondary to otitis media. Indeed these conditions are sometimes produced in this way, although sinus thrombosis is not the most common cause of abscess.

More frequently the infecting organism is carried directly into the brain substance. The diagnosis as to whether or not abscess complicates sinus thrombosis is of great importance, because it is desirable to leave the dura unopened if it can be done with safety. I have seen a case under the care of Dr. B. A. Randall, in which this question arose. The right external jugular vein and some of its tributaries were ligated two inches below the angle of the jaw by Dr. Randall, on account of thrombosis, and the part above removed. The right lateral sinus was thrombosed. It was opened, the thrombus removed, and the sinus packed. The right ear had discharged purulent fluid for four years. Dr. Randall invited me to see the patient after this operation. The boy was in marked stupor but could be aroused to answer questions. The pulse was about 65 and the temperature was normal. The patellar reflexes were absent. He had some ataxia of his right limbs, but had not had any weakness of his limbs nor the Babinski sign. The symtoms were suggestive of cerebellar abscess, and the question, therefore, became very pressing as to whether the dura should be opened or not. The symptoms after the operation on the lateral sinus and jugular vein were very grave, but in the opinion of Dr. Randall and myself might be explained by the lesions already found, and to open the dura through an infected region would expose the boy to grave danger of intradural infection. The latter might be avoided by sterilizing the dura at the point of operation, and later by packing with iodoform gauze; but the penetrating powers of micro-organisms is great, and we were eager to avoid the risk of adding any complication in the serious condition of the little patient. Delay was therefore decided upon. The symptoms were carefully watched with the idea that any increase in them would justify the opening of the dura and searching for an intradural abscess. Just here I may remark that judicious delaying is one of the most difficult problems of cerebral surgery. Our course was justified, the patient slowly improved, and a few weeks ago I had the pleasure of seeing him in very good condition.

E. W. Roughton, in reporting a case of cerebellar abscess recently, says, "Let me now tell you that much more severe and definite symptoms of intracranial disease may occur in cases where, as far as one can judge, there is extensive disease of the ear and mastoid process without any actual disease inside the skull; perhaps one is not justified in stating that there is no intracranial disease in these cases, but it is certain that they may recover after operative treatment limited entirely to the ear and mastoid process." He refers to the case of Sainsbury and Battle in which the symptoms were severe; and constant headache, drowsiness, frequent vomiting, giddiness, inequality of pupils, diplopia, well-marked double optic neuritis, and pyrexia of an irregular type were present. Mastoidectomy was performed and the patient recovered completely. The cranial cavity was not opened. These writers believe that in all cases of ear disease with head symptoms sufficiently grave to call for operative interference and including even a severe optic neuritis, the patient should not be subjected to the major operation of craniotomy till the minor operation of clearing away all extracranial disease has been performed. (Roughton, *Lancet,* 1905, Vol. 2. p. 1597.) I would urge, however, that the delay should not be long, as the symptoms mentioned above are very important.

It is astonishing that purulent otitis media may exist a long time and not cause brain abscess until after many years. Oppenheim speaks of a case in which the otitis media existed thirty-four years, and of another in which it existed forty-five years before abscess developed, and yet acute otitis media may cause abscess. According to Grunert, in ninety-one per cent. the process is chronic, in nine per cent., acute. Schmidt and Gruber have reported cases in which the ear disease seemed to be cured before brain abscess developed, and on the other hand Baginsky and Gluek have observed a case in which signs of brain abscess appeared on the twenty-second day after the commencement of the ear disease (cited by Oppenheim). I have had the opportunity of observing with Dr. Randall a case in which temporal lobe abscess developed in a man sixty-eight years old, who had had middle-ear disease most of his life. As the symptoms of brain abscess began only a few weeks before his death, it does not seem probable that he had had a latent abscess for a long period of time. Before the operation on the brain, the pulse was 102 and the temperature 99 degrees and a fraction; but this man did not have meningitis and had two abscesses near together in the temporal lobe, probably parts of one lesion; only one, however, was found at the operation and evacuated. The elevation of the pulse and temperature when I saw him was late in the disease; this is sometimes the case in abscess.

Oppenheim, probably the first, has called attention to the occurrence of hemorrhagic encephalitis as the result of otitis media. The symptoms are likely to be those caused by lesions of the motor cortex.

Multiple abscesses make operation very uncertain, as there is no means of determining from the symptoms whether the patient has one or several abscesses, possibly communicating; and abscesses often are multiple. Abscess of the brain not infrequently is multilocular, and one or more pockets may escape detection, as in the case referred to above. Another difficulty the surgeon has to contend with is unusual density of the pus. In one of the cases I had the opportunity of studying with Dr. Randall, the diagnosis of cerebellar abscess seemed sufficiently clear to justify operation. This was done by Dr. Randall. The patient's temperature before operation was about normal, her pulse ranged from 64 to 108. Unfortunately the notes have been mislaid. She had lateral nystagmus in looking towards the side of the cerebellar abscess, and this sign I believed might be of value in determining the affected lobe, but I have not been able to find it in any other case, although I believe it has been observed a few times by others. The necropsy showed that Dr. Randall must have entered the abscess with the trocar, and yet no pus flowed. The lesson to be learned from this case is that the brain should be incised and not merely punctured at the place suspected of concealing an abscess, as little damage is done to a lateral lobe of the cerebellum by incision if the wound does not become infected; indeed the cerebellum seems to be able to stand much rough handling, even the excision of a large part of a lateral lobe, without causing serious symptoms, as we have seen in a number of cases at the University Hospital. Most of the cases of brain abscess I have collected for this paper have resulted from middle-ear disease, but a case reported by Dr. C. K. Mills and myself, in 1896, was without discoverable primary lesion at the necropsy (*Journal of Nervous and Mental Disease*, September, 1896).

C. H., a baker, forty-eight years old, was admitted to the hospital, January 30, 1896. He had previously been in fair health. His mother had never heard him complain of earache. During the summer of 1895 he suffered constantly from severe headache. On December 20, 1895, he became unconscious and had three general convulsions. He remained unconscious two days, and when he regained consciousness it was noticed that he was partially paralyzed on the right side, and that he could not talk properly. January 29, 1896, he had another attack of unconsciousness without convulsions, but with aphasia and paralysis. He was brought to the hospital the same day.

On admission he was in a condition of stupor: he did not speak when addressed and had almost total right-sided paralysis, incontinence of urine and feces, and entire loss of pain and touch sensation over the paralyzed side. By testing him with food brought toward his mouth from the right or left side it was noticed that he opened his mouth to receive the food only when it was brought from the left side. Likewise when a pointed instrument was brought near either eye from the side as if to touch it, he winked only when the motion was made in front of the left half of each eyeball. From these tests it was evident that right homonymous hemianopsia was present. He was found to have double papillitis more marked in the left eye. His general condition gradually became worse. He occasionally complained of headache, which he did not localize.

On February 25, 1896, breathing was stertorous and the face dark red in color. The coma gradually increased until he died, twenty hours after the beginning of this attack.

There was no evidence at any time of middle-ear disease. During the entire time he was in the hospital until just before his death, respiration, pulse, and temperature presented no indications of the purulent process within the brain.

A horizontal section made just above the corpus callosum revealed an abscess on the left side in the centrum semiovale, and corresponding antero-posteriorly with the position of the optic thalamus, internal capsule, and part of the lenticular body. Both tympanic membranes were normal. No evidences of suppuration or perforation were present. The pleura, pericardium, heart, spleen, and kidneys were normal. Microscopic examination of the pus from the cerebral abscess showed only the ordinary staphylococcus pyogenes aureus. There were about two ounces of pus in the abscess cavity and left ventricle. Both eyes were removed and examined by Dr. Oliver, and the posterior halves of the eyeballs showed well-marked choked discs, more decided on the left side, the swelling and inflammation of the nerve head and surrounding retina being extensive and covered at places with minute capillary hemorrhage. The right hemiplegia and right homonymous hemianopsia made a diagnosis of some lesion at the posterior part of the left internal capsule probable. The convulsions may have been caused by rupture of the abscess into the left lateral ventricle. The patient seemed to be word deaf. As cerebral abscess may occur after suppurative processes in the lungs, these organs were examined but nothing was found with the exception of spots of catarrhal pneumonia in both lungs. Suppuration was present only in the cerebrum.

One of the cases coming under my observation, the clinical history and pathological material of which I have obtained from Dr. Chas. S. Potts, under whose care the patient was, shows that a cerebellar abscess may readily escape detection. The temperature varied very little from the normal but the pulse was a little high. The patient was a man aged fifty-seven years, somewhat dull mentally, and had been unable to walk for a year on account of vertigo; had complained of headache about four months; and had ataxia in walking. He was in semicoma two days before his death. Ear disease was not suspected, and there was little reason for a diagnosis of brain abscess; yet a large and a small abscess near together were found in the left cerebellar lobe. The posterior inferior cerebellar artery passing to this lobe was dilated and thrombosed, and it was evident that in this way the abscess had originated. While the abscess in this case was not entirely latent, the symptoms were not sufficient to justify a diagnosis during the life of the patient.

Cerebral abscess is usually regarded as more common than cerebellar, and as Henri Bourgeois says, this may be because the latter is less often diagnosed, and less often operated upon; but I doubt the correctness of this statement. He refers to the statistics of Acland and Ballance taken from the records of St. Thomas Hospital from 1876 to 1894. According to these, nine abscesses were in the temporal lobe; seventeen in the cerebellum; and two of the latter were associated with temporal lobe abscess. The same investigators have found that at the hospital for sick children, in thirty-five years, two abscesses of the temporal lobe and four of the cerebellum occurred. (*Contribution a l'étude des abcès otitiques du cervelet*, G. Steinheil, Paris, 1902.)

Oppenheim (*Der Hirnabscess*, Nothnagel's System, Band IX., Theil II.) says that Pitt in 9000 necropsies found brain abscess in 56; of these, 18 arose in the ear or temporal bone. Freitel in 6000 necropsies found abscess 21 times, and of these 7 arose in the ear. Others regard one half or more of the cases of brain abscess as arising in the ear. Gowers puts it at 42.5 per cent. Men have abscesses two or three times as often as women. Le Fort and Lehmann's statistics of 458 cases of brain abscess are: Cerebrum, 227; cerebellum, 113; cerebrum and cerebellum, 11; pons, 5; cerebral peduncles, 1; fourth ventricle, 1. So that the relative frequency of cerebellar abscess to temporal lobe abscess is as one to three. Dr. Randall informs me that in his experience cerebellar abscess has been more frequent than cerebral.

Another case recently under my observation shows how exceedingly difficult it may be to diagnose between abscess of the brain and purulent meningitis. A young man was admitted to my wards at the Philadelphia General Hospital, in marked stupor and paralyzed on the left side of the body. The temperature varied from 98.6 degrees to 102 degrees, and was never subnormal; the pulse varied from 80 to 110; the respiration from 20 to 25, or occasionally 30. Cerebrospinal fluid obtained by lumbar puncture showed lymphocytes 4 per cent., but no organisms. Within a few days he was found to have a purulent discharge from his right ear. The diagnosis seemed to be abscess of the right temporal lobe, implicating the right internal capsule and thereby causing left hemiplegia, possibly associated with purulent meningitis, and secondary to otitis media. Dr. E. Laplace, whom I called in consultation, and I decided that the patient was unable to endure an operation. A day or two before his death râles were heard in the lungs. He had no abscess of the brain, but the upper part of the right cerebral hemisphere was covered with pus, as was also, to a less extent, the corresponding part of the left hemisphere; pus was also found at the base of the brain and in the lateral ventricles. Cultures taken at the necropsy revealed tubercle bacilli, and miliary tuberculosis of the lungs was found.

A case, studied by Drs. Hoyt, Randall, Frazier and myself, shows how difficult the diagnosis of cerebral abscess may be. The slight elevation of temperature suggested purulent meningitis; the slightly abnormal pulse, abscess; both, however, might indicate abscess. The presence of pus in each ear and in the nasal sinuses without localizing cerebral symptoms made the diagnosis of location difficult, but the marked stupor left no doubt in our minds that some intracranial lesion was present, and we believed that it was purulent chiefly because of the purulent processes in the bones of the skull.

Optic neuritis, so valuable a sign of tumor or abscess, was not present. The pain was confined to the left temporal region, but was an unreliable sign, for I have known localized pain of the head to be very misleading. However, because of its presence on the left side and the more serious middle-ear disease on the left side, the operation was performed on the left side. We fully recognized that the abscess might be in the right temporal lobe. The absence of word deafness in this case did not alter our diagnosis, as abscess in the temporal lobe is usually in the lower part of the lobe, and below the center for word hearing. In a left-handed man, as the patient was, it would not be likely to cause deafness even if it extended into the first left temporal convolution.

Dr. Hoyt, who had first had charge of the case and performed the necropsy, believed from the findings of the necropsy that the purulent meningitis was of recent origin, and the question arises, could it have been caused by the free irrigation of the abscess cavity and the washing thereby of some of the infectious material into the meninges? An abscess cavity possibly should be irrigated, but there is danger thereby of producing a purulent meningitis. Aspiration would be a dangerous proceeding, as often the pus would not be thoroughly evacuated, and in some cases would not flow freely through the needle. It seems well to avoid very intense irrigation of an abscess cavity, and it is possible that drainage with moderate irrigation would be sufficient, especially if after the operation the patient is made to lie with the opening downward so that the pus may find free escape. Dr. Muller has suggested to me that sponging out the abscess as is done in the abdominal cavity might be sufficient.

Unusual and interesting cases of brain abscess are the following:—

A case of brain abscess with cure was reported by Randall and Potts in 1903. After removing pus from the mastoid cavity a perforation of the dura, two millimeters in width, was discovered, out of which pus was escaping. An incision through the dura exposed the brain substance which showed no appearance of intracerebral abscess, but a few days later such an abscess was found and evacuated. A few days still later, another abscess cavity was evacuated. The child recovered. There seems to have been a limited subdural abscess in this case associated with multiple intracerebral abscesses, and yet recovery occurred (*Archives of Otology*, Vol. XXXII. No. 3, 1903).

Pial abscess is uncommon, but Randall (*The University Medical Magazine*, June, 1894) reported a case in which in association with extensive meningitis, a small abscess cavity was found lying between the medulla oblongata, pons, and cerebellum; a smaller abscess occupied the corresponding position on the right side, while a third, much larger, was found above the medulla oblongata. These three abscesses were within the pia. In this case the pulse was slow when the temperature was high. The case resembles an unpublished case seen by Dr. T. H. Weisenburg, of which I have seen the specimen.

The brain abscess is likely to be on the side of the middle-ear disease and near the petrous portion of the temporal bone, but in some cases the discharging ear may not be the primary focus, and the other ear may have been the longer and more seriously affected, although at the time of observation there may be no discharge from this ear. In a case (Case III.) reported by Stoll, (*American Journal of the Medical Sciences*, February, 1906, p. 223), the abscess was secondary to an acute otitis media, and was situated in the parietal lobe. The author gives as an explanation for this unusual occurrence that the infection must have been embolic in character, and the embolus so small that it was not arrested until it had wandered some distance from its origin.

Abscess of the brain developing in the course of typhoid fever has been observed by A. C. Brown (*Edinburg Medical Journal*, New Series, 1900, Vol. VIII. p. 228), and his seems to have been the first case of cerebral abscess caused by this disease. The lesion was supposed to be a tumor, and operation resulted in evacuation of the pus and recovery. McClintock (*American Journal of the Medical Sciences*, April, 1902, p. 595) has reported brain abscess caused by the typhoid bacillus.

The cause of death in operations on cerebellar abscess, according to Barr and Nicoll (*British Medical Journal*, February 16, 1901, p. 390), in many cases is thrombosis of the veins of Galen with distention of the ventricles and edema of the brain. The fatal result may rapidly follow the operation or may be delayed for weeks or months, even when recovery from the effects of the abscess is supposed to have occurred.

Abscess following trauma of the head without injury of the skin and bone of the head may occur. Ehrenrooth (*Deutsche Zeit f. Nerv.* Vol. XX. Nos. 1 and 2, p. 103) has reported such a case. Intracranial hemorrhage certainly may occur from trauma without fracture of the skull, and probably a damaged portion of the brain may offer a favorable soil for the growth of bacteria, but, nevertheless, bacteria must penetrate in some way.

Cassirer (*Archiv. fur Psych.* Vol. XXXVI. No. I, p. 153), has found reported in the literature, sixteen cases of abscess of the pons and medulla oblongata, but of these only ten seem to him trustworthy. Two, or possibly three, were cases of abscess of the medulla oblongata; in the others, both pons and oblongata medula were implicated, or pons alone. He himself has reported a case. The reasons for the infrequency of abscess in this part of the brain, according to Cassirer, are the relative smallness of these parts, the less liability to injury, and the remoteness from the various cavities of the skull from which the primary infection comes. If aseptic embolus is carried to the brain it is more likely to lodge in the left Sylvian artery. Possibly also, the pons and medulla oblongata are more resistent to bacteria, as some have thought.

Abscess in each temporal lobe has been observed by Whitehead (*Lancet*, February 13, 1904, p. 428). One abscess in the left temporal lobe was evacuated and eighteen months later the patient apparently was well, but later cerebral symptoms developed. An operation revealed an abscess in the right temporal lobe, and this abscess, was drained and recovery from the second operation also occurred. The patient had had a purulent discharge from each ear.

An interesting paper on cerebral abscess which I read after my paper was completed has recently been published by M. Allen Starr (*Medical Record*, March 10, 1906).

In referring to certain of the cases mentioned in this paper, I wish to thank my colleagues for permission to make use of their notes in connection with my own, especially Dr. B. A. Randall, with whom several of the cases were seen.

DISCUSSION.

Dr. John W. Boyce said that focal symptoms are often absent, and we can not depend upon them to lead us to the exact location of the abscess. Auscultatory percussions are of valuable assistance in diagnosis. If after watching the blood pressure day after day we find it steadily increasing it is of great significance.

Dr. T. M. T. McKennan said that there are some conditions which give symptoms of brain lesions due to other causes. We should always exclude uremia. Abscess of the brain is sometimes due to infection from lesions of the skull. He has had ten or twelve cases in his experience and all were fatal. Slow pulse with some elevation of temperature is a suspicious symptom of intracranial involvement. There are generally some stupor and mild delirium.

Dr. E. E. Mayer said that focal symptoms will not always guide us. In all cases where there are suppuration and history of injury with continued slow pulse and elevation of temperature, operation should be considered. Pain is as important as any single symptom can be. It is sharp and excruciating. These cases should be operated as soon as diagnosis can be made.

Dr. Theodore Diller said that out of five thousand cases admitted to the Boston Hospital last year only one of brain abscess was reported. The frequency of brain abscess is therefore interesting. Pus in some locality either in the skull, ear, or lungs is necessary in making a diagnosis. We should operate as soon as diagnosis can be made, and it is better to operate early even though we err in diagnosis.

Dr. R. W. Stewart said that results in his experience have been very poor, even if the patient recovers, the liability to have epilepsy follows. A large piece of skull should be removed and the brain freely exposed. The majority of cases are due to abscess of the middle ear.

Dr. J. D. Heard said that it is estimated that four thousand cases of abscess of the brain secondary to otitis media occur in the United States annually. Etiology is of great importance; the abscess may sometimes follow a trifling injury. Pain is sometimes absent. There is no one diagnosed symptom.

Dr. C. Q. Jackson said that where abscess of the brain is suspected in mastoid disease, we should make a second operation through a new opening. There are no pathognomonic symptoms.

Dr. Buchanan reported a case of brain abscess occurring in a woman previously well with the exception of styes. The skull was opened under a local anesthetic. Abscess was drained and patient recovered and to-day is perfectly well. Quickest way to enter skull is trephine. He does not think it advisable to irrigate an acute abscess.

Dr. Spiller, in closing, said that pulse and temperature can not be depended upon in making a diagnosis. Our results in brain surgery are very good. He believes an osteoplastic flap should be made in operations on the brain, wherever it is practicable. The skull can be opened by this means in five to ten minutes.

HEART TONICS AND STIMULANTS.

BY RUDOLPH MYERS, M. D.,
Huntingdon.

(Read before the Huntingdon County Medical Society, March 13, 1906.)

Influenza, the coal tar preparations, and the many other causes have been responsible for and bring to the physician's observation in his daily practice, so many weak hearts that it is well for us to stop and give the subject more than a passing thought. Since considering this subject and thinking back over my experiences of nearly forty-three years, I have changed my views somewhat as to the use of heart tonics and stimulants and can heartily join in the views expressed by Louis Faugeres Bishop of New York, as published in *The Journal of the American Medical Association,* March 26, 1904, page 820. He teaches that the heart, when not influenced by drugs, wonderfully adapts itself to the condition and demands of the system. He deprecates the indiscriminate use of heart stimulants, and says that stimulating a weak, rapid heart is like whipping an already overladed and jaded horse. He further states facts of such vital importance that I will quote his thought in his own well expressed language.

"The fact is we have but few heart stimulants in the true sense of the word, and we hardly ever use these. The only time when drugs are used with the direct purpose of stimulating the heart is in sudden emergencies. Then we avail ourselves of the fact that many drugs that are useful as heart regulators also possess the property of temporarily stimulating the heart. The best heart stimulants, however, such as ammonia, ether, and nitrite of amyl, are poor regulators, and the best regulators, such as digitalis, strophanthus, and iodid of soda, are poor stimulants when quiet action is needed. The whole question of heart stimulation needs revision in its clinical aspect. A good beginning could be made if the term stimulant were dropped entirely and the idea of regulation substituted. A hundred lives are saved by judicious control of the overstimulation which results from disease where one is saved by direct stimulation as such. The only excuse for the use of heart stimulants is that they have been misnamed and are useful as regulators."

Before entering into the study of the different individual heart stimulants and tonics, let us spend a short time in considering some of the prerequisites required, in order that the physician may be able to intelligently administer the remedies indicated by the pathological condition of his patient. He must have a perfect knowledge of the pathology of the case. "Is it good and judicious treatment if on examination we find valvular disease and prescribe digitalis without considering the condition of the heart muscles, the state of the blood vessels and that of the liver and kidney, and even the dose of digitalis?" Prof. Hare, in a paper published in the *Therapeutic Gazette*, page 506, 1902, makes these remarks:—

> "It is by no means an uncommon practice of physicians, after determining more or less carefully the condition of the heart, to fail to make a careful study of arterial tension, pulse force, and equally important to attempt to discover whether there is arterio-capillary fibrosis. Upon the condition of the heart muscle and upon the development of the arterio-capillary fibrosis, much more depends upon the diagnosis, prognosis, and treatment of a case of so-called cardiac disease than is usually thought."

He advises frequent and thorough examinations of the urine for albumin, urea, specific gravity and quantity. He says:—

> "Not only do these renal conditions aid us in getting information concerning the probable condition of the heart muscle and of the blood vessels, but they also give us an insight into the ability of the kidneys to eliminate poisonous materials and the drugs themselves, both of which, if retained to an abnormal degree, produce results which are disadvantageous."

Dr. O. T. Osborne of Yale, points out the difference between a cardiac tonic and a cardiac stimulant by saying that a cardiac tonic is a drug that will more or less permanently strengthen the heart and pulse, and leave the heart in better condition after its action has ceased than it was before taking the drug. A cardiac stimulant, on the other hand, is a drug which will stimulate and perhaps for a short time strengthen a weak heart, but, after its action has ceased, the heart is left really in a worse condition than before taking the drug, unless the cause for which it was given cease to act. In other words, it irritates the heart to better work, but at the expense of its reserve energy.

The list of heart tonics and stimulants is pretty long. Digitalis seems to be at the head of the list. Dr. Osborne calls it the queen and peer of all heart tonics. Other heart tonics and stimulants are convallaria, strychnin, strophanthus, caffein, ether, erythrophlein, camphor, spartein, nitroglycerin, ammonia, nitrite of amyl, adonidin, suprarenal extract, apocynum cannabinum, and iodid of soda. Dr. Osborne makes this division of cardiac remedies: Cardiac tonics,—digitalis, strophanthus, spartein, cactus, convallaria, adonidin, and suprarenal preparations; cardiac stimulants,—alcohol, ammonia, camphor, nitrite of amyl, and ether; stimulating cardiac tonics,—strychnin, and caffein.

In considering the merits and demerits of the various cardiac remedies and their proper application to the pathologic condition found in the patient, I want to be as brief as possible. The remedy which is most familiar to all of us is digitalis and will be considered first. Digitalis, when it is of standard strength, is one of the most positive drugs we have. Only the fresh leaves should be employed in making the tincture or fluid extract. Dr. A. Jacobi, in a paper before the New York State Medical Society, stated that digitalis leaves, kept in a tight tin box for one year, lost fifty per cent. of their physiologic strength, although they appeared quite fresh. A writer whose name I have forgotten says that "digitalis is regarded as one of the hardest drugs to handle. Its action varies in different individuals. Its preparations vary in strength or active principles." The paper of Dr. Jacobi explains the above statement. It would be well for us to throw away our old powder and see that we get fresh powdered leaves.

Before considering the therapeutic use of digitalis, it may be well to consider some of the dangers arising from the misuse of the drug. In a paper of Dr. James M. French, published in the *International Clinics*, Vol. II., 1904, we get some very interesting facts on the subject.

"Digitalis is generally said to have cumulative action. As a rule, when large doses have been given for several days or for several weeks, symptoms of poisoning develop. That they are due to the storing up of the drugs has long been doubted. Dr. W. H. Porter believes that there are three factors causing the symptoms of digitalis poisoning: (1) The diminished nutritive supply to the cardiac muscle resulting from high arterial tension; (2) the increased work imposed upon the heart; and (3) the action of digitalis *per se* as a decided muscle poison.

Dr. French also says:—

"Another source of danger lies in the heedless use of digitalis in every case in which a diagnosis from physical examination alone indicates it. In a case of mitral incompetency, for example, the venous engorgement with resultant passive congestion of the liver, kidneys, and other organs may be so great as to render a sudden stimulation of the heart to increased activity positively dangerous. In such cases the patient should be prepared for its action by free purgation, or better by venesection."

On page 171 of Vol. II., *International Clinics*, Dr. French says:—

"The prime indication for the administration of digitalis in heart disease is a failure of compensation. It should never be given to a patient whose circulation is being carried on with regularity, no matter what the pathologic condition may be. It is in no sense a remedy for heart disease. Our highest aims in its use is the restoration of function. When the organ is able of itself to compensate for the defect, the administration of digitalis can prove only injurious."

Crawford, in the *Practitioner*, 1905, says:—

"When there is high pressure in the arteries or the arteries are degenerate, digitalis should be given with great circumspection; if given at all, it may be combined with a vasodilator, such as nitroglycerin, or replaced by strophanthus. It is important at this stage to cease the administration of digitalis, as soon as its beneficial effects are established."

It may be well just here to study for a few moments the manner in which digitalis acts upon the heart and arteries. Dr. Wood, Jr., Dr. S. A. Visanska, and Dr. Lauder Brunton regard digitalis as possessing heart stimulating power to some extent. Dr. Charles S. Sajous says that "digitalis is probably the most perfect cardiac stimulant of our pharmacopeia." Dr. Sajous is rather sanguine in his declaration. He, however, publishes in the *Lancet* that the therapeutic actions of digitalis are: (1) It regulates the heart action; (2) assists the failing circulation and acts as a diuretic. Dr. S. A. Visanska says, in the *Medical Record*:—

"Digitalis is a cardiac regulator. By its effect upon the cardiac ganglia and the muscle itself, it induces contraction, and strengthens the systole; by its effect on the pneumogastric nerve it prolongs the diastole. The result of this double action is that the diastole of the heart is lengthened so that more blood is allowed to enter the ventricle, while the systole is made stronger so as to impart more vigor to the flow of blood into the arterial system and at the same time a rapid and irregular action of the heart is slowed and steadied. The lengthening of the diastole gives the heart more rest or sleep and in that way the heart becomes stronger, and the heart is also nourished in diastole. If we, therefore, lengthen the diastole, even a little bit, between each systole, we gain considerable in twenty-four hours in the opportunity for the heart to be nourished. In cases where the administration of digitalis causes constriction of the coronary artery, the combination of caffein, which is an arterio-dilator, will entirely counteract the vaso-constrictor elements of digitalis."

Digitalis should never be used in atheroma, high tension of the arteries, a weak cardiac muscle from prolonged fevers or from fatty degeneration, or in aortic regurgitation. Its most brilliant effects are manifested in mitral insufficiency with failing compensation.

Although the further study of digitalis would be exceedingly interesting, we must hasten to consider briefly the other heart remedies.

Strophanthus is considered the best substitute for digitalis. The new National Dispensatory speaks of its action as nearly like that of digitalis. O. T. Osborne of Yale, in a paper published in *Mercks Archives,* says that the action of strophanthus is just like that of digitalis, only less so. He says that "it is a cardiac muscle stimulant, less liable to produce nausea and vomiting, less liable to cause cumulative action, produces less contraction of the blood-vessels, and perhaps by directly stimulating the kidney, is a little more of a diuretic." He gives his reasons for preferring and using strophanthus in place of digitalis in certain cases: (1) "When there is need of a cardiac tonic and digitalis produces nausea and vomiting, and too great an increase of blood pressure; (2) when a cardiac tonic is indicated and the blood pressure is already too high; (3) when a rapidly acting cardiac tonic is desired; (4) when there is more nervous irritability and weakening of the heart than actual muscular debility or incompetency; (5) children are very susceptible to the action of digitalis, and hence strophanthus is many times better for them when a cardiac tonic is required."

Spartein sulphate should slightly slow the heart action, regulate its rhythm, prevent its venous irritability, slightly diminish the pulse tension, and moderately increase the output of urine. This drug is not a substitute for digitalis.

"Cactus regulates the heart, quiets its nervous irritability, and often renders larger doses or the constant use of strong cardiac tonics unnecessary. It is used when the heart is weak in convalescence, when it is debilitated from old age, when digitalis is contraindicated, in angina pectoris and in functional disorders of the organ, such as the tobacco-heart, the alcoholic heart, etc. It acts very well in cases contraindicating digitalis such as aortic valvular lesions, degeneration of the cardiac muscles, and in the heart weakness of Graves' disease, anemia, and sexual exhaustion."

"Convallaria acts in a manner similar to digitalis and is used under similar therapeutic indications. The advantages over digitalis are: (1) It is more strictly limited to the heart; (2) it does not prolong the diastole to the same extent, but slows cardiac action; (3) it is probably free from the danger of cumulative action; (4) it is probably better borne by the stomach."

"Caffein stimulates and then depresses the cardiac ganglia as well as the cardiac muscles. Its chief field of usefulness is in cardiac heart affections. Strychnin has the widest range and is the most effective of the heart tonics.

Dr. John Upshur of Richmond, Va., in a paper published in *Merck's Archives,* in April, 1901, says, quoting from Dr. Potter:—

"Strychnin stimulates the motor nerve cells of the spinal cord, the cardiac motor ganglia, the respiratory and vasomotor centers in the medula, and the sensory nerves and their terminal elements. The result is that respiration is deepened and quickened, the action of the heart is increased, and the blood-pressure raised."

Dr. Upshur then says:—

"In the enfeebled heart action from chloroform narcosis it is a valuable remedy, and it has become almost routine practice with many to precede the administration of chloroform by giving hypodermically, $1/_{30}$ to $1/_{20}$ gr. of strychnin nitrate. Its value administered as a safeguard, will be appreciated when we remember that death from chloroform is due to paralysis of respiration, or paralysis of the heart, or the two combined, plus the shock of the operation. Strychnin directly antagonizes these conditions. In the enfeebled heart of typhoid fever, the septicemias and pneumonia, or in syncope due to heart failure, the author knows no remedy so potent and prompt to sustain heart action. The superiority it has over digitalis and other heart tonics of its class is demonstrated by the fact that there is no cumulative depressant second or third stage. Nor will its power be disappointing in organic valvular lesions of the heart when the heart muscle needs support in the performance of its function. The fact that it may be pushed for a longer time and give satisfactory and definite results places it at the head of heart tonics."

May I sound a note of warning to those who use very large doses of strychnin? It is only a stimulant and overstimulation is bad therapeutics and is always followed by a depression.

In the last edition of the National Standard Dispensatory, J. M. Da Costa is quoted as saying:—

"Because nitroglycerin relaxes arterial tension and thus relieves the heart of a certain amount of labor in cases characterized by high vascular tension, and allows it to beat more forcibly and regularly, it has been considered a cardiac stimulant; but this employment of nitroglycerin as a cardiac stimulant in shock or collapse is not justified by a knowledge of its action on the heart or blood vessels, it being a depressant rather than a stimulant."

Nitroglycerin is an arterio-dilator as intimated above and not in any way a heart stimulant. G. W. Grill in the *Year Book* for 1905, says that in shock it hastens the decline of the blood vessels and increases the shock. A writer in the *Therapeutic Gazette* says that "the rule for the use of this drug, in connection with its influence upon the circulation, should be to employ it when the heart is to be relieved of excessive work, and not to employ it when the heart really needs a direct stimulant, for nitroglycerin is not such a drug." John Upshur of Richmond, Va., says that "nitroglycerin is contraindicated in the weak and impaired heart of typhoid fever, septicemia, and surgical shock." When we have high arterial tension producing difficult cardiac action, nitroglycerin is one of our best medicines.

Adrenalin extract is regarded as one of the most powerful heart stimulants we possess. Dr. Martin of the University of Pennsylvania, says that "the only drug which seems to have any effect in desperate cases is adrenalin chlorid."

One of the most important means to be used for a heart whose valves are insufficient is rest, both physical and mental. One of the greatest clinical teachers in America presented to his class a patient with both mitral and aortic regurgitation, and, in addition, some leakage of the tricuspid valve. He said to the class: "You see how serious is this case. Of course we shall put him to bed and require him to rest there absolutely; that is, not allowing him to even sit up to eat or read. We shall make his diet as unirritating as possible and it shall consist mainly of milk. We shall keep his bowels freely open and shall remove all sources of worry as far as possible, from him. Of course we must give him medicine, otherwise he would be sure that nothing is being done for him. We shall prescribe for him. We shall prescribe for him ten drops of compound tincture of cardamom every three hours for the next week and I shall show him to you at the end of the week, and you will see how much he has improved." The writer says that the result justified the prophecy. The lesson was too good to be forgotten.

INFANT FEEDING.

BY ROSS J. HEMMINGER, M. D., D. D. S.,
Meyersdale.

(Read at the July meeting of the Somerset County Medical Society.)

The great and increasing importance the subject of infant feeding is assuming in all classes of society has led to the reduction of infant feeding to a science.

All competent observers are agreed that the best nourishment for a baby naturally comes from its mother, but unfortunately a large number of mothers, from physical or other causes, are unable to give this proper nourishment.

It appears to be one of the penalties of modern civilization that an increasing number of women can not or will not nurse their offspring; hence it is that in recent years a large amount of study and labor has been expended upon substitute infant feeding.

The efforts to place in proper ratio the food principles of the various substitutes for human milk, or supply that which it may lack, have led to the "percentage feeding." While some of the benefits of this method of feeding come from the care and cleanliness with which these foods are prepared, too little attention has been given to getting clean fresh food for the infant.

In preparing an artificial food for infants, Nature should be followed as closely as possible, more especially in the nutritive value.

Many analyses of human milk show it to contain approximately 4 per cent. fats, 1.05 per cent. proteids, 6 per cent. sugar and .02 per cent. mineral matter.

None of the lower animals furnish a milk that approximates human milk; cow's milk is most often chosen as the basis of an artificial food, composed on an average analysis, of 4 per cent. fats, 4 per cent. proteids, 4 per cent. sugar and .7 per cent. mineral matter. In human milk there is from two to three times as much fat as proteids and one half more sugar than in cow's milk, while in cow's milk the quantity of fats, proteids and sugar are nearly equal.

If cow's milk is allowed to stand for any length of time the fat, being lighter than the other ingredients, rises to the top as cream. Now in the cream the proportion of fats to proteids is greatly increased, being about two and one half times as much fat as proteids. Preparing infant food from this fatty portion of the milk is a comparatively simple matter, requiring only diluting and adding sugar.

There are many diluents, such as water, egg water, cereal water, and gruel, none of which has been proposed that does not have some effect on the curding of the milk. When simple water is used lime water should be added, which renders the curd softer.

In selecting a cow's milk the following requirements should be met. It should be from a healthy animal; it should be clean; it should be not over twenty-four hours old; and it should be sweet. Before attempting to prepare the food it should be tested with blue litmus paper, and if the color is only slightly changed the milk is fresh; if the color is changed to a dull red the milk is beginning to sour; if it turns bright red it is quite sour.

For a young infant remove from the top of a quantity of milk all the cream and enough milk to make one half the original quantity; one part of the top milk should be mixed with three to five parts of the diluent and one part sugar to twenty-five parts of the mixture. In every instance begin on a weak mixture and gradually decrease the diluent and increase the quantity of milk. After the food has been prepared it should be placed in separate nursing bottles, which hold only enough for one feeding, and these plugged with clean cotton and kept on ice or in a refrigerator away from meat and vegetables.

The per cent. of proteids, fats, and sugar must be varied to the requirements of each individual child. Therefore, infant feeding requires careful study of each case to discover if possible why the food is not successful. The napkins should be examined to see if the urine leaves any stain as a deposit of urates shows faulty metabolism. Too much fat will cause vomiting of soft white curds or it will pass from the bowels in that condition. An excess of proteids will cause hard curd which will be vomited or pass from the bowels. Too much sugar will cause fermentative colic, eructation of gas, green stool and diarrhea.

The quantity of proteids and fats can be increased or diminished by increasing or diminishing the quantity of top milk, or by increasing or diminishing the diluent.

The quantity of sugar can be increased by the amount of sugar added; as has been already stated, cow's milk is deficient in sugar.

If the stools show signs of fermentation or putrefaction, clean out the bowels with a mild purgative. Supply nourishment that will be absorbed with little digestive effort, and, when the stools become normal, gradually return to milk diet.

Occasionally infants will be found who can not digest cow's milk without constant difficulty and distress. The shifting of the percentage or changing the diluents appears to make little difference.

After a fair and intelligent trial of cow's milk has proved unsuccessful, white of egg, yellow of egg, peptonized milk, or condensed milk may be tried.

CONTROL OF NASAL HEMORRHAGE.

Henry Jones Mulford, New York, describes a simple method for controlling nasal hemorrhage, citing cases and outlining the blood supply of the nose and pharynx. His method consists of the subcutaneous injection of suprarenal extract into the arterial supply at the nearest accessible point to the bleeding area. The injection may be made directly into the artery supplying the part, or it may be thrown into the tissue closely adjacent to the artery. This certainly is simple, but the result is marvelous. The ingoing arterial current sweeps the solution directly into the leaking area, all the vessels of the part are constringed, and almost at once the hemorrhage ceases.—*American Medicine.*

PROPRIETARY THERAPEUTICS.

H. C. Wood, Jr., Philadelphia (*Journal A. M. A.*, June 10), considers that the increasing use of proprietary drugs is exceedingly detrimental to the best interests of medicine. He refers more particularly to nostrums or mixtures and not to definite chemical compounds which may be the property of some manufacturing druggist. While these latter may not be an unmixed blessing, whatever objections he has to them are based on essentially different grounds. The great fundamental objection to nostrums is that to all set and unalterable formulas, they must necessarily be a misfit in the ever-changing aspects of disease. Another is their secret or semi-secret nature, and this is all the more dangerous when it is masked by a deceptive show of frankness. There is no universal assurance that even the alleged composition is the true one, and some of those that publish a formula attempt to obscure the real nature of their mixtures by using uncommon names of well known drugs or including some unfamiliar ingredient which may be assumed to have some special virtue. A common defense of these nostrums is that of their value as property. Wood asks: How have the manufacturers acquired such valuable property rights? Have they hired men to be sick to prove the virtues of their compounds, or has the medical profession been willing to utilize human suffering for the benefit of the nostrum vender? The reasons why these nostrums are so profitable to their manufacturers are, Wood thinks, the imperfect therapeutic instruction given in our medical schools and the extremely lavish and often very shrewd advertising they receive. It has been estimated that $600,000 is expended annually in advertising secret nostrums, but Wood considers this far short of the true amount. These hundreds of thousands of dollars are paid, he says, out of the physicians' pockets and their patients' lives, and yet the medical profession is blind enough to let the process continue without complaint. The nostrum venders, he says, at a conservative estimate, have obtained control of the reading columns of two thirds of the medical journals of this country, and it is time, he thinks, to call a halt.

"Facts are stubborn things."—Smollett.

The Pennsylvania Medical Journal.
PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

ATHENS, OCTOBER, 1906.

> *"A good physician is one who, having pure drugs, knows when to use them, how to use them, and, equally important, when not to use them."*

THE BEDFORD SPRINGS SESSION.

The Bedford Springs Session has come and gone, and the retrospect to those in attendance will be most pleasant. The program was well organized and successfully carried out, the business executed with dispatch, the hotel accommodations were a revelation; but, above all, the opportunities for social intercourse, for making new acquaintances and cementing old ones, were beyond anything accomplished in recent years. The registration book shows two hundred and sixty-six in attendance and in addition about one hundred ladies accompanied their husbands, making a total of upward of three hundred and sixty-six visitors. While this registration is low compared with the number in attendance at Scranton, Pittsburg, York, or Allentown, when the fact is taken into consideration that at Bedford Springs there is no strong local profession to draw upon, the number appears very respectable and those who braved the long, tedious ride were well repaid.

Of stated and formal entertainments there were none: the meeting, in this respect, forming a marked contrast to others. The unanimous verdict was one of approval. All the amusements under the hotel management were thrown open freely to the physicians. Swimming pool, golf links, tennis courts, bowling alleys—all were well patronized, while the broad verandas and open lawns were thoroughly enjoyed. Practically all the physicians in attendance were registered at the Bedford Spring Hotel, and the splendid opportunity thereby afforded for personal contact brings forward a very serious question of policy as to the advantage of frequent annual meetings under such surroundings.

Among the purposes of this society set forth in the ordinances are: first, federation and organization of the medical profession of the state; second, the advancement of medical knowledge and education; third, the promotion of friendly intercourse among physicians; and fourth, the education of public opinion in regard to state medicine. The influence of the state society towards these objects can be accomplished through two channels only, *i. e.*, the circulation of the JOURNAL, as the official organ of the society, and the annual meetings of the society itself. In the advancement of organization, of medical knowledge, and in the education of popular opinion, these two go hand in hand, but for the promotion of friendly intercourse, the state society must depend entirely on the personal contact afforded at the annual meetings. Such a meeting as the one at Bedford Springs carries out this object admirably, and it would be well were we to have more like it. But there are other considerations to be met. Nothing stimulates the life of a county society more than to be the host of the visiting delegates from the rest of the state, and the great majority of our members gain acquaintance with the state body only when its meetings occur in their immediate neighborhood. In addition, it is of great benefit to have the meetings from time to time in medical centers like Philadelphia or Pittsburg on account of the clinical material existing there. So the migratory nature of our meetings must continue. But in view of the success of the social side of the Bedford Springs session, the Committee on the Place of Meeting should look well into the matter. There are other summer resorts where we could gather,—Cambridge Springs, Eaglesmere, Delaware Water Gap, and others. Some of them also are situated in counties where comparatively weak societies exist, and where it would be possible for several of these societies to join together for the entertainment. Let the committee look this matter up and report at Reading.

One new feature was introduced at Bedford Springs which should continue. Arrangements were made for a joint meeting of the county secretaries, censors and trustees on Tuesday evening. This was held at the Arandale and was most enjoyable. The object was to get the secretaries together to compare notes as to society work, with the idea of still further strengthening our organization. As has been many times stated, the success of any of our component societies depends, in great measure, on the kind of man it has for secretary. And any wide-awake secretary should be glad to attend, and benefit by such conferences. With proper management of such meetings, much good will be accomplished, and, incidentally, a larger number of regular attendants will be attracted to the meetings of the state society. T. B. A.

THE WORK OF THE HOUSE OF DELEGATES AT BEDFORD SPRINGS.

It is a pleasure to criticize the recent meeting of the Medical Society of the State of Pennsylvania held at Bedford Springs, for, while no doubt the future is to show the society still more perfect in its workings both as a business body and as a scientific assemblage, this was generally felt to be the very best meeting the society ever held.

The House of Delegates assembled at the hour appointed, eight o'clock on Monday evening, before the opening of the scientific program, and the members registered in goodly numbers so that the work of the business body was well under way at the close of this meeting of the House. This permitted an adjournment to Wednesday morning and allowed all in attendance to take part in Tuesday's program. The routine business occupied Wednesday morning and required a short meeting on Thursday; but the members of the House of Delegates may well congratulate themselves upon the time they were allowed to devote to the scientific meetings of the session. All this was accomplished because of the excellent attendance at the Monday evening meeting and because of the faithful service of the officers and the committees in having all the reports in shape for presentation, and for the prompt consideration and action of the House of Delegates. As to the make up of the body of delegates, while many old faces were to be seen in the assemblage, these "old hands" were in the minority and none evidenced any seeking after selfish ends. Those who for the first time took their places in the House of Delegates "settled into the harness" promptly and worked shoulder to shoulder with the "regulars."

It is gratifying to note that there were no radical changes proposed in the methods of the society. The only changes in the By-Laws were such as to allow more freedom in the arrangement of the scientific program. The Committee on Scientific Work advised and urged this action and the unanimous consent of the House secured the adoption of the amendments.

Two changes were required in the election of the Board of Trustees. Dr. Richard Armstrong of Clinton County, and Dr. Isaac C. Gable of York County, having served consecutively six years were not eligible for reëlection. The House filled these vacancies by electing Dr. David H. Strickland of Erie County, and Dr. John B. Donaldson of Washington County, and reëlected Dr. William S. Ross of Blair County. A minute was recorded expressing the appreciation of the society for the long and valuable service of Dr. Armstrong, and Dr. Gable was honored with the presidency for the ensuing year. Those who know the sterling worth of the new trustees and their ability for hard work readily endorse the choice of the delegates.

The following officers for next year were elected: President, Isaac C. Gable, York; vice-presidents, Charles Emmerling, Pittsburg; William B. Ansley, Saltsburg; Philip R. Koons, Mechanicsburg, and Henry M. Neale, Upper Lehigh; secretary and editor, Cyrus Lee Stevens, Athens; assistant secretary, Theodore B. Appel, Lancaster; treasurer, George W. Wagoner, Johnstown.

Reading was selected as the place for the next meeting.

A word concerning the scientific program, the Committee on Scientific Work is to be congratulated upon the excellent work of the sections and too, that they have continued to lay special stress upon the general meetings. The orations and papers were all excellent. In every particular the Bedford Springs session was a success. C.

"THE PROPHYLAXIS AND MANAGEMENT OF PROSTITUTION."

At the request of one of our county medical societies the JOURNAL prints in the current issue an address under the above heading. The address contains much that is worthy of commendation, but as the JOURNAL is published for and by medical men, we can not allow certain statements to pass unchallenged, nor permit any one, physician or layman, to conclude that our sentiments coincide with the pervading argument of the author. In so far as he confines himself to an expression of sympathy for the seduced woman, to the recommendation of adequate hospital facilities for the treatment of venereal disease, and to the education of the laity, even the young, in the knowledge of sexual hygiene and of the prevalence of abuse of the sexual function, to this extent we are in cordial sympathy. We glory in the knowledge that the American medical profession is on all sides marshalling its forces for an active campaign of education among men and women. It is a duty long left undone. Over two hundred years ago Dr. Samuel Johnson deprecated the enactment of severe laws to control evil. "This method," he said, "has long been tried, but tried with so little success, that rapine and violence are hourly increasing, yet few seem willing to despair of its efficacy."

With the author's final aim, then, we are in accord. When he allows himself to digress, and first to proclaim prostitution necessary, and immediately thereafter to suggest both legalization of the crime and protection of the male and female prostitute, he compels us to part company with him, and to publicly announce our disapproval. He says, "She (the prostitute) has a right to live (presumably as a prostitute), but it is preferable to have her segregated where she can be found, and to restrict her excursions in search of customers. Her dwelling should be sanitary and under police surveillance, so that theft, assault, and disorder may be prevented." A paragraph before he ventures, "It is, however, reasonable to assert that the man who visits a prostitute should be able to do so without danger to his life or pocketbook." And finally he makes this remarkable statement. —"Few of us are enough advanced in our philanthropy to appreciate the extent to which she (the prostitute) indirectly saves our wives and daughters."

He closes his address with the half apology, "I do not assert that my conclusions are correct, although I believe every word I say," after impugning the intelligence and logic of his audience by the manner in which he attempts to demonstrate that the prostitute "protects" the wives and daughters of the land,—namely, "All medical men know that toward the end of her career, which is usually a matter of but a few years, she is almost always diseased." Coupling with this "It is preferable to have her segregated where she can be found," we see how imperfectly he believes that which his pen has been allowed to say. His name will certainly be rolled as a sweet morsel under the tongue of every one eager for an excuse to quiet his conscience while respectably ruining his present or future home.

The physician's reply, and every physician is in duty bound to frame an answer to this teaching, is easily found in the statute book. The mass of the people will not need the statute book, having rested their case on the Bible. In eternal and in human law prostitution is a crime, and the male prostitute is the more explicitly criminal of the two. The attempt has been made both here and abroad to legalize this crime, to make it easy and safe for the unmarried and the married to dishonor themselves and their families and expose them to disease. What is more, bitter contests have been waged, even by physicians, with a view to affording an opportunity to the male prostitute to contract disease "less surely" than when the female runs at large. No method has yet been devised by which venereal infection has been rendered impossible, or by means of which the criminality or the shame has been lessened. In every respect the question is a practical one of a physical disease and a search for a cure. Inject the moral side of the argument, and the physical harm is still there, a perpetual menace to the health of the nation. What a strange and unwholesome spectacle this of a physician advising the public how they may most safely expose themselves in a criminal manner to disease!

Shall medical men assume an attitude equivalent to that of chaperon to the house of ill-fame? Shall we render it possible and easy (and safe if we could) for the boy or his father to become members of the prostitute class, and to continue women in their debasement? What a wicked argument is reglementation in the light of twentieth century knowledge? Is there a physician living and wideawake to-day who is ignorant of the fact that Europe is preparing to dispense with reglementation as an influence inimical both to health and clean morals? When men of the experience and authority of Lecour of Paris, and Pontoppidan of Copenhagen, and Van Ijsselstein of The Hague, conclude that the direct result of licensing, segregation, and the examination of prostitutes is a proportionate increase in prostitution and in the spread of venereal disease among the masses, and when they prepare to discard harmful methods which their governments have diligently proved and found worse than wanting,—shall we as American physicians push our young men and women down to a deliberately low level by sanctioning with safeguards that which the law terms an indecent offence? No ultimate aim, however laudable, can condone such a bathing in moral turpitude!

The JOURNAL would remind the author, who announces himself as "The Delegate from the Section on Hygiene and Sanitary Science of the American Medical Association," that the Association has under consideration and will, without doubt, adopt at its next session the following resolution, offered in one of America's cradles of liberty:—

"Whereas, There exists among the laity a general impression that sexual intercourse is necessary to the health of men; and

Whereas, It is claimed that this impression rests on the authority of the medical profession: now, therefore, be it

Resolved, That in the opinion of the Section on Hygiene and Sanitary Science of the American Medical Association, continence is not injurious to health, and that this section reprobates the contrary doctrine as a menace to the physical and moral welfare of the individual and society." W.

THE LAKESIDE HOME AT TORONTO.

One of the greatest object lessons which a visitor might have brought away from the British Medical Association meeting at Toronto was that given by a trip to the Lakeside Home. This is the summer establishment of the Hospital for Sick Children. This latter is a large and remarkably well-equipped hospital in the heart of the city. It has about two hundred beds and these are in general well filled, as the hospital draws patients from all over the neighboring country. Early in the spring this hospital is entirely closed except one ward where accident and operative cases are held until they can be moved. The entire establishment—superintendent, resident-staff, nurses, and children—moves out to the Lakeside Home. This home is situated on an island in Lake Ontario and is reached in about ten minutes by swift steam launches, which leave the city every half hour. The lake, it must be remembered, is really a small ocean on which steamers can travel for two or three days without seeing land, so that the air is as pure as on our own seashore.

The hospital is a very substantial frame building which compares favorably in comfort and appointments with any city institution, and could well be used the year round if necessary. The wards are large, bright and airy, and well appointed. The visitors were first shown through several of these and their admiration of them was second only to their surprise that they contained no beds and no children. One began to wonder where the hospital part came in. This wonder was dispelled as soon as they were conducted to a large veranda and found the accustomed rows of cots with their patients. Every ward there has a veranda nearly as large as the ward itself, and here the children stay night and day. Canvas sides can be arranged if needed so that the children have to be taken in only during the severest driving rains. Indeed, on the day of our visit the wind was blowing such a gale that a large three-masted schooner had been blown ashore a mile below the hospital. Yet all the children were out as usual and heartily enjoyed the blow. Some of the larger boys live in tents on the hospital grounds. The result can be imagined. One would go far to find such another healthy looking and happy lot of children. The superintendent and her assistants say that two or three weeks after the removal in the spring, the children change so that they can hardly realize that they are the same ones that they have had in their city wards during the winter.

All look forward to the time when they can go to Lakeside as they know that then they can begin to get results in cases that have completely baffled them under ordinary hospital confinement. The children remain here till the really cold weather in the fall, when the city hospital is reopened and all are moved back. Indeed, such is the success of Lakeside that it is doubtful if many cases would not be kept there the year round if it were not for the fact that the lake often freezes, making it difficult to get supplies.

A glance at the nurses, as well as at the children also told the story. The strong, bright-eyed, red-cheeked, and sunburnt young women were a very delightful contrast to what we only too often see in our own city hospitals. There is a large training school connected with the hospital. The course is three years and the instruction is broadened by some months spent in general hospitals.

Our own hospitals have much that they could learn from Lakeside. One has heard of hospitals where a few of the children were sent to the seaside or the country for one or two weeks, but never before of one where the whole outfit was moved out for a large part of the year. In one isolated spot, Sea Breeze at Coney Island, we have learned the value of fresh air and sunshine for tuberculous children. Lakeside teaches its value for all sick children. If every city could have seaside or country branches for their hospitals we would surely be a healthier, a happier, and a richer people. One wonders how long we will continue with a hospital system by which, as soon as a person is sick, he is effectively and at once deprived of the one thing that often is the most important part of his cure. J. M. W.

BOSTON MEDICAL LIBRARY JAN 8 1908

Editorial Notes.

Usual Departments Omitted.

In order to make room in the present number of the JOURNAL for the full minutes of the proceedings of the state society meeting at Bedford Springs, it is necessary to omit the book reviews, necrologies, and most of the society reports. S.

Value of Membership in the County Society.

Membership in a component county medical society carries with it membership in the Medical Society of the State of Pennsylvania and entitles the member to all its rights and privileges. The member receives the PENNSYLVANIA MEDICAL JOURNAL monthly, can attend the meetings of the state society, and is entitled to the benefits of the Medical Defense Fund and the Medical Relief Fund without any fee other than the annual dues paid to his county society. The subscription price of the PENNSYLVANIA MEDICAL JOURNAL to those not members of a component county society is two dollars a year.

Only members of a component county society are entitled to membership in the

American Medical Association, the annual dues of which are five dollars. Members of the association receive the *Journal of the American Medical Association*, the largest and the best medical weekly published in the world. The subscription price of the *Journal of the American Medical Association* for those not members of a component county society is five dollars a year, the same amount that entitles one to membership in the association with its journal and other privileges. S.

The Oration on State Medicine.

It is with great satisfaction and pride that we direct attention to the Oration on State Medicine which appears in this issue. From a position, almost at the foot, in the list of states, in matters sanitary and in the registration of vital statistics, Pennsylvania has risen to a place second to none since the organization of the Department of Health in June, 1905. Much time has necessarily been consumed in placing this department on a working basis, and to secure the coöperation of the members of the medical profession as the needs of the situation demand.

The fundamental *raison d'etre* of the Department of Health is the prevention of disease, and the highest duty devolving on the medical profession is of the same nature. Hence all requirements by the department should meet a cordial response by all who have the welfare of the human race at heart. K.

Third Annual Meeting of the Seventeenth Censorial District.

The third annual meeting of the Seventeenth Censorial District was held in the Court House in Bloomsburg, August 24, at 11 A. M. It was called to order by Dr. L. B. Kline, and an organization was effected with Dr. H. B. Meredith of Danville, as president, and Dr. L. B. Kline of Catawissa as secretary.

An appropriate address of welcome was delivered by Dr. J. M. Vastine, president of the Columbia County Medical Society.

Dr. H. E. Shive of Snyder County, had prepared an instructive paper on "Neuralgia," and in his absence it was read by Dr. H. W. Gass of Sunbury, and discussed by Drs. Kline, Newbaker, Becker, Gass, and Beale.

After dinner at the Exchange Hotel, the visiting physicians were afforded the privilege of inspecting the hospital, all being pleased with the arrangements and equipments thereof.

The afternoon session was called to order at 1:45 P. M. The first paper presented was on "Pathological Examinations as an Aid to Diagnosis," by Dr. J. B. Cressinger of Sunbury, pathologist of the Mary A. Packer Hospital. The discussion was opened by Dr. C. F. Altmiller of Bloomsburg, pathologist of the Joseph Ratti Hospital, who ably supported the author as to the practical importance of the subject.

"A Medical Retrospect," by Dr. B. F. Sharpless, was read by Dr. J. R. Montgomery, the author being out of the county. The paper was replete with suggestion and illustrations showing the progress and advancement of the science of medicine and surgery during the last two or three decades. The discussion was opened by Dr. E. L. Davis, who devoted a large part of his time in reporting a case of intussusception of the jejunum, in which an operation was performed and forty-two inches of the jejunum removed, with a complete recovery of the patient.

Dr. B. F. Beale of Snyder County, read a paper on "Urinary Analysis." Its value as an aid in diagnosis was most forcibly illustrated. The subject was discussed by Drs. Becker and Cressinger.

A paper on "The Feeding of Infants and Children" was presented by Dr. George A. Stock of Danville, who said that "the proper nutrition of infants is certainly the most important branch of pediatrics," also that "human milk is the ideal food for infants, and whether a mother can or can not nurse her infant successfully is the first important question that arises when she presents her child for our inspection, saying that 'it is not thriving.' " He makes a routine practice of examining the milk with Holt's apparatus every other day for three examinations. The subject was handled in a manner that convinced all present of its practical importance to the profession. The discussion was opened by Dr. E. A. Curry, followed by Drs. Cressinger, Reagen, McHenry, John, Hower, Bruner, and Becker, all endorsing the teachings of the paper.

Closing words of a pleasing and commendatory character were offered by a number of those present. All voted the session a great success. The attendance of thirty-four physicians was an increase over the two former meetings. These gatherings are fruitful of good results in bringing the members of the profession in the censorial district into a more intimate acquaintance and fellowship. The secretary was directed to procure a suitable book in which to record the minutes of the meetings. On motion it was unanimously resolved to hold a meeting next year in Snyder County at such time and place as may be decided upon by the District Censors.

The following were present: Drs. Altmiller, Arment, Bowman, Brown, Bruner, Davis, Gardner, Hill, Hoffa, Hower, John, Kline, McHenry, Montgomery, Reagen, Redeker, Smithgall, Vance, Vastine, Willets, of Columbia County; Curry, Meredith, Newbaker, Patten, Robbins, Shultz, Steck, of Montour County; Becker, Cressinger, Gass, Graham, McCay, Swenk, of Northumberland County; Beale, of Snyder County.

L. B. KLINE, Secretary.

Changes in Membership of County Societies.

The following new names have been reported from August 25 to October 1: Frank S. Campbell, Uriah F. Rohm, Hopewell; Calvin C. Dibert, Buffalo Mills; A. Hank Evans, Saxton; James Washington Lindsey, Imler; James F. Price, Six Mile Run; Henry L. Hartzell, Altoona; Albert M. Buzard, Kylertown; John Gordon, Clearfield; L. C. Rowles, Grampian; Percy E. Deckard, Harrisburg; S. S. Hoop, Andover; Harry C. McClain, Hustontown; William L. McKibben, John W. Mosser, George M. Robinson, Henry S. Wishart, McConnellsburg; J. S. Swartzwelder, Needmore; Charles S. Aldrich, Joseph P. Benson, Frank A. Lorenzo, Francis D. Pringle, P. Guiseppe Spinelli, Punxsutawney; Jacob P. Bottenhorn, Anita; George B. Hennigh, Sykesville; Jesse J. Hilleary, DuBois; Benjamin E. Merrill, Dents Run; James A. Miller, Robert H. Miller, Hamilton; Irvin R. Moliney, Brookville; Arthur F. McCormick, Falls Creek; Harvey B. McGarrah, Samuel Reynolds, Reynoldsville; Arthur R. McNeil, Beech Tree; John G. Steiner, Knoxdale; Carm Y. DeTar, Kellettville; J. Barton Johnson, Ligonier.

Charles S. Bridenbaugh, Emlenton, has been transferred from the Blair to the Venango County Society.

William M. Scott, Black Lick, has been transferred from the Butler to the Indiana County Society.

Edward C. Hancock, Yardley, has resigned from the Bucks County Society.

William A. Slangenhaupt, East Brady, has resigned from the Clarion County Society.

John W. Worrell, Pittsburg, has resigned from the Fayette County Society.

Charles W. Musgrove (Jefferson Medical College, '79) died at his home in McEwensville, July 29, after a long illness, aged 68.

Frank P. Grove (University of Pennsylvania, '01) died at his home in Alexandria, August 20, from tuberculosis, aged 30.

Samuel A. Buchanan (University of Pennsylvania, '93) of Philadelphia, died at the Polyclinic Hospital, August 27, from blood poisoning which developed from several successive abscesses, aged 40.

The following are no longer members of the respective county societies: Thomas N. McKee and William C. Stewart, of the Armstrong County Society; Charles J. Dietrich, Louis L. Thompson, and Leroy J. Wenger, of the Berks County Society; George M. Beatty, Charles L. DeWolf, Frank L. Hazlett, Roy L. Stackpole, and James B. Thompson, of the Butler County Society; Bayard T. Dickinson, of the Dauphin County Society; Charles L. LaShelle, of the

Delaware County Society; Guy C. Boughton, John F. Flynn, and Joseph R. Pope, of the Erie County Society; Joseph W. Albright, Lee M. Goodman, J. Hunter Miles, James Rankin, and Frederick G. Sanford, of the Lycoming County Society; Jacob A. Fraunfelder, of the Northampton County Society; William C. Samuel, of the Schuylkill County Society; George B. Gray, of the Tioga County Society; Elmer L. Dickey, Frank M. McClelland, M. Ada McKee, and Ernest F. Nelson, of the Venango County Society; Charles Graves and George L. McKee, of the Washington County Society, and John R. Blank, of the York County Society.

Simon F. Earnest has removed to 5605 Spruce St., Philadelphia.

Frederick S. Birchard has removed to Montrose.

Chester E. Albright has removed to Muncy.

Elizabeth C. Spencer has removed to Sea Girt, N. J.

Joseph F. Koerper has removed to Roslyn.

Charles C. Royce has removed to Wayne.

Henry E. Caldwell has removed to Blossburg.

Wentworth D. Vedder has removed to Expedit.

Robert A. Stewart has removed to Fort Loudon.

Present membership 4,602. S.

State News Items.

Diphtheria at Bloomsburg has closed the public library and one of the schools.

Dr. Ross B. Patterson has been appointed subdean of Jefferson Medical College.

Dr. Wendell Reber delivered the address at the opening of Temple College, September 17.

Dr. Lewis Clyde Bixler, Pittsburg, and Miss Ida Evans, Easton, were married September 19.

Dr. Robert Fox, Philadelphia, has been appointed supervisor of the state laboratory by Dr. Dixon.

Dr. George L. Hatfield (Jefferson Medical College, '00) died at his home in Uniontown, September 6.

Dr. Robert S. McCombs, Philadelphia, and Miss Richenda Pratt, Carlisle, were married September 8.

Dr. George B. Wood, Philadelphia, and Miss Helen Foss, daughter of Bishop Foss, were married October 2.

Dr. Harry L. Helper (University of Pennsylvania, '88) died at his home in Reading, August 18, aged 76.

Typhoid fever is epidemic at Fogelsville, Lehigh County, and the Allentown hospital is filled with the cases.

Dr. Howard F. Hansell delivered the address at the opening of Jefferson Medical College, September 24.

Dr. Adam Orr (Queens College, Cork, Ireland, '62) died at his home in Allegheny, September 25, aged 66.

Dr. E. B. Heckel addressed the students on "Ethics," at the opening of the Western Pennsylvania College, October 2.

Dr. Solomon S. Bachman, (Long Island College Hospital, '70) died at his home in Philadelphia, September 10, aged 69.

Dr. Harriet S. French (University of Pennsylvania, '65) died at her home in Philadelphia, September 5, from heart disease, aged 82.

Dr. Levi J. Enders (University of Pennsylvania, '76) died at his home in Williamstown, after a short illness, September 11, aged 52.

Dr. Samuel R. Sample (Jefferson Medical College, '57) died at Intercourse, Lancaster County, October 1, from a sudden attack of heart trouble.

Dr. William H. Hartzell, Allentown, has been tendered the position of chief resident physician of the State Hospital for the Insane at Norristown.

Dr. W. L. Shindel, Sunbury, proposes to furnish a private room in the Sunbury Hospital in memory of his father, the late Dr. Daniel W. Shindle.

Dr. James C. Miller (Jefferson Medical College, '85) of Jeannette, died at the Westmoreland Hospital, September 22, from pneumonia and uremia, aged 50.

Dr. John Stolze (Eclectic Medical College of Pennsylvania, '65) of Reading, died at Lake Geneva, Wis., September 11, after a long illness, aged 73.

Dr. John Henry Weaver (University of Pennsylvania, '73) of Altoona, died at the home of his son in Greenboro, Md., from cerebral hemorrhage, August 18, aged 75.

Dr. H. Clint Bacon (Jefferson Medical College, '68) died at his home in Harveyville, August 15, from kidney disease, aged 64.

A drug clerk in Philadelphia, William Frost, was recently fined fifty dollars for selling morphin without a prescription and without placing a poison label on the bottle.

Dr. Stewart L. McCurdy, Pittsburg, was elected vice-president of the Association of Surgeons of the Pennsylvania Lines at the annual meeting in Pittsburg, September 13.

Dr. Samuel Wesley Lippincott (University of Pennsylvania, '97) of Philadelphia, died at the University Hospital, September 22, from a hemorrhage due to gastric ulcer, aged 36.

Dr. Robert L. McCurdy (Cleveland Medical College, Medical Department of Western Reserve University, '53) died at his home in Freeport, August 26, after a brief illness, aged 81.

Dr. William H. McCullough (Cincinnati College of Medicine and Surgery, '78) of Tarentum, died at the home of his sister in Petrolia, August 28, after a prolonged illness from injuries received in a railroad accident, aged 55.

To Purify the Delaware River. Health officers from New Jersey, Pennsylvania, and New York held a joint meeting in Atlantic City, September 14, and adopted plans for these states, by united action, to prevent the pollution of the Delaware River.

Causes of Some Deaths. Sixty-two deaths from tuberculosis of the lungs were reported in Philadelphia for the week ending September 15; thirty-two from pneumonia; twenty-three from cancer; sixteen from typhoid fever, and eleven from whooping cough.

A Chi Club in Scranton, composed of graduates of Medico-Chirurgical College, was organized September 20. The officers are: Dr. Gilbert D. Murray, Scranton, president; Drs. Charles P. Stackhouse, Wilkes-Barre; William B. Stricker, Nanticoke, and Frank J. Wagner, Carbondale, vice-presidents, and Dr. Thomas Monie, Archbald, secretary and treasurer.

Meeting of Workers Among the Insane. The Association of Trustees and Physicians of State and Incorporated Hospitals for the Insane of Pennsylvania held its semiannual meeting at the South Mountain Asylum for the Chronic Insane of Pennsylvania, September 28.

The following papers were read: "Is It Advisable to Parole Patients Who Are in a Feeble-minded Condition?" by Dr. J. Nicholas Mitchell, secretary of the Committee on Lunacy of the Board of Public Charities; "Certain Progressive Steps in the Care of the Insane," by Dr. George W. McCafferty, active resident physician of the State Hospital for the Insane, Norristown; "The Problem of Securing Attendants and Nurses for the Hospitals of the Insane and Holding Them to Service," by Dr. Morris S. Guth, State Hospital for the Insane, Warren.

Officers of the association are: President, Dr. John B. Chapin; vice-president, Dr. H. B. Meredith; secretary, Dr. Morris S. Guth.

Communication.

Relief Fund for San Francisco Physicians.

Pittsburg, September 13, 1906.

To the Editor:—Will you kindly credit the Allegheny County Medical Society, in the JOURNAL with the following additional subscriptions to the California Relief fund: Walter F. Donaldson, $3; Milton & Luba Goldsmith, $2; total $5; making a grand total of $808.00.

WILLIAM B. EWING, Treasurer,
Allegheny County Medical Society.

PROPRIETARY REMEDY NOMENCLATURE.

C. S. N. Hallberg, Chicago (*Journal A. M. A.*, December 9), criticizes the unscientific and unsystematic nomenclature of proprietary medicines, illustrating his points by lists of names showing the imagination, or lack of it, on the part of the originators, and also by samples of names of entirely distinct preparations that are so similar as to be liable to cause confusion. He further shows that some of these names so prominently before the profession and the public are practically only synonyms of regular pharmaceutic preparations and therefore deceptive. Thinking physicians would better appreciate these remedies if they were sent out under their proper designation, and the name of a reputable manufacturer is the best possible trademark for the protection of the public. The way to do to get rid quickly of trade names, he says, is through litigation and obtaining decisions in line with former cases, such as those of castoria and syrup of figs, which will prevent the use of these names.

Official Transactions.

MINUTES OF THE PROCEEDINGS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, AT THE FIFTY-SIXTH ANNUAL SESSION, HELD AT BEDFORD SPRINGS, SEPTEMBER 10, 11, 12 AND 13, 1906.

MINUTES OF THE HOUSE OF DELEGATES.

MONDAY EVENING, SEPTEMBER 10, 1906.

The House was called to order at 8 P. M., by the President, Dr. William H. Hartzell, Allentown.

Dr. Alexander R. Craig, Columbia, Chairman of the Committee on Credentials, called the roll and twenty-seven delegates responded to their names.

The President appointed the following Business Committee: Drs. John B. Donaldson, Canonsburg; Henry Beates, Jr., Philadelphia, and A. A. Long, York.

The Report of the Secretary was read by Dr. C. L. Stevens, Athens, and on motion received and ordered filed.

REPORT OF THE SECRETARY.

The enforcement of the Ordinances and By-Laws adopted last year has been accomplished without much embarrassment or interruption to the work of the Society, with the trifling exception of a slight delay in the beginning of operation by the Committee on Scientific Work. These rules, under which the Society is now working, are not without some defects, but are an improvement upon former regulations and it is hoped that they will be given some years' trial without modification. It takes time for the mass of our membership to become familiar with our laws, and frequent changes lead to waste of time and energies that should be directed in carrying forward the work of our organization. When once amendments are offered there is likely to be a flood of amendments proposed.

District meetings have been held during the year in only seven of the eighteen censorial districts. These meetings, however, have been productive of good, and it is thought that when they are more generally understood and attended, they will still further advance the interest of our physicians and our citizens. It is noticed that, in one district, only the members of county societies were invited, instead of inviting all physicians supposed to be eligible to membership.

Some of our councilors have entered fully into the spirit and work of their office; others have gone more slowly, waiting probably until the needs and the methods of the work shall become more apparent.

One new society has been organized during the year. The Fulton County Medical Society was organized July 18, 1906, with seven members, and two other physicians are already members of adjoining societies. The present actual membership is 4597. There are a few physicians who are members of more than one society, but no individual is counted more than once. The membership last year was 4300, giving us a net gain during the year of 297, as against 266 for last year, and 360 for the previous year.

The following societies show gains during the year: Philadelphia, 91; Allegheny, 47; Westmoreland, 36; Lackawanna, 22; Jefferson and Luzerne, 16 each; Fayette, 12; Dauphin, 9; Bedford and Monroe, 8 each; Snyder, Warren, and York, 7 each; Clarion and Wayne, 6 each; Lawrence, Lehigh, and McKean, 5 each; Indiana, Lebanon, and Montgomery, 4 each; Blair, Franklin, Lancaster, Mercer, Northampton, Susquehanna, and Tioga, 3 each: Bucks, Huntingdon, Northumberland, and Washington, 2 each; Armstrong, Bradford, Chester, Clearfield, Columbia, Crawford, Cumberland, Erie, Mifflin and Somerset, 1 each.

The following have shown a decrease in membership: Lycoming, 15; Schuylkill and Venango, 7 each; Butler, 6; Berks, 5; Clinton, 3; Perry and Potter, 2 each; Carbon, Delaware, and Montour, 1 each.

There are now five counties in the state having no society; viz, Cameron, Forest, Juniata, Pike, and Sullivan. A fair proportion of the eligible physicians of four of these counties belong to neighboring county societies, Juniata being the only county in the state in which we have no members.

Respectfully submitted,
CYRUS LEE STEVENS, Secretary.

The Report of the Treasurer was presented by Dr. G. W. Wagoner, Johnstown, and on motion received and referred to the Council for audit.

REPORT OF THE TREASURER.

RECEIPTS.

1905.	
Sept. 23, to cash, balance on hand . . $	860.03
Oct. 30, to cash, dues from Center County	45.50
Oct. 30, to cash, dues from Huntingdon County	49.00
Oct. 30, to cash, dues from Montgomery County	143.50
Oct. 30, to cash, dues from Venango County	80.50
Oct. 31, to cash, dues from Lancaster County	229.25
Oct. 31, to cash, dues from Fayette County	124.25
Oct. 31, to cash, dues from Luzerne County	180.25
Oct. 31, to cash, dues from Mifflin County	33.25
Oct. 31, to cash, dues from Tioga County	49.00
Nov. 2, to cash, dues from Allegheny County	939.75
Nov. 2, to cash, dues from Chester County	106.75
Nov. 2, to cash, dues from Warren County	57.75

Nov. 2, to cash, dues from Westmoreland County	75.25
Nov. 4, to cash, dues from Adams County	36.75
Nov. 6, to cash, dues from Columbia County	52.50
Nov. 7, to cash, dues from Bucks County	113.75
Nov. 16, to cash, dues from Philadelphia County	1888.25
Nov. 18, to cash, dues from Clinton County	31.50
Nov. 21, to cash, dues from Berks County	176.75
Nov. 21, to cash, dues from Northampton County	134.75
Nov. 22, to cash, dues from Dauphin County	119.00
Nov. 24, to cash, dues from Wyoming County	21.00
Nov. 27, to cash, dues from Butler County	78.75
Dec. 6, to cash, dues from Erie County	94.50
Dec. 11, to cash, dues from Wayne County	24.50
Dec. 11, to cash, dues from Northumberland County	31.50
Dec. 11, to cash, dues from Snyder County	24.50
Dec. 12, to cash, dues from Carbon County	36.75
1906.	
Jan. 5, to cash, dues from Monroe County	28.00
Jan. 9, to cash, dues from Lehigh County	105.00
Jan. 11, to cash, dues from Bedford County	28.00
Jan. 15, to cash, dues from Clarion County	45.50
Jan. 20, to cash, dues from Lackawanna County	199.50
Jan. 25, to cash, dues from Cambria County	113.75
Jan. 26, to cash, dues from Potter County	36.75
Feb. 2, to cash, dues from Washington County	182.00
Feb. 9, to cash, dues from Jefferson County, 1904-5	60.00
Feb. 16, to cash, dues from Somerset County	38.50
Feb. 23, to cash, dues from Union County	29.75
March 15, to cash, dues from Lycoming County	168.00
April 25, to cash, dues from Perry County	36.75
May 3, to cash, dues from Schuylkill County	103.25
May 14, to cash, dues from Franklin County	84.00
May 31, to cash, dues from Schuylkill County, 1904-5	78.00
June 2, to cash, dues from Jefferson County	66.50
June 30, to cash, dues from Cumberland County	73.50
July 9, to cash, dues from Bradford County	70.00
July 12, to cash, dues from Lebanon County	28.00
July 20, to cash, dues from York County	129.50
July 20, to cash, dues from Clearfield County	87.50
Aug. 2, to cash, dues from Susquehanna County	54.25
Aug. 17, to cash, dues from Indiana County	54.25
Aug. 24, to cash, dues from Elk County	50.75
Aug. 25, to cash, dues from Mercer County	73.50
Aug. 29, to cash, dues from Blair County	112.00
Aug. 31, to cash, dues from Delaware County	117.25
Sept. 7, to cash, dues from Greene County	43.00
Sept. 8, to cash, dues from Montour County	31.50
Sept. 8, to cash, dues from Lawrence County	59.50
Sept. 8, to cash, dues from Beaver County	73.50
Total	$8300.53

EXPENDITURES.

Order No.	1905.	
152.	Oct. 28, by cash, A. O. J. Kelly, exp. Com. on Archives	$ 6.05
153.	Oct. 28, by cash, A. R. Craig, exp. Com. on By-Laws	3.00
154.	Oct. 28, by cash, John B. Roberts, exp. Com. on By-Laws	4.23
155.	Oct. 28, by cash, C. L. Stevens, exp. Com. on By-Laws	15.75
156.	Oct. 28, by cash, A. Koenig, exp. Com. on By-Laws	25.00
157.	Oct. 28, by cash, C. L. Stevens, exp. Com. on Scientific Business	6.75
158.	Oct. 28, by cash, T. B. Appel, exp. Com. on Scientific Business	30.00
159.	Oct. 28, by cash, A. Kathrine Bietsch, exp. Com. on Legal Matters	5.25
160.	Oct. 28, by cash, Henry Beates, Jr., exp. Com. on Legal Matters	70.00
161.	Oct. 28, by cash, J. P. Hale Jenkins, exp. Third Censorial District	50.00
162.	Oct. 28, by cash, F. G. Sairs, stamped envelopes	32.20
163.	Oct. 28, by cash, C. L. Stevens, Journal for October	333.33
164.	Nov. 23, by cash, W. G. Jordan, programs, Scranton Meeting	48.00
165.	Nov. 23, by cash, C. L. Stevens, Journal for November	333.33

166.	Nov. 23, by cash, Agnace McCarthy, stenographer at Scranton	25.00
167.	Dec. 11, by cash, C. W. Van Artsdalen, stenographer at Scranton	91.25
168.	Dec. 11, by cash, W. G. Jordan, stationery, etc.	61.08
169.	Dec. 11, by cash, C. L. Stevens, Journal for December	333.33
170.	Dec. 11, by cash, C. L. Stevens, salary as sec'y.	150.00
171.	Dec. 11, by cash, C. L. Stevens, salary as editor	100.00
172.	Dec. 11, by cash, G. W. Wagoner, salary as treasurer	25.00
	1906.	
173.	Jan. 8, by cash, L. C. Alexander, stenographer at Scranton	59.78
174.	Jan. 8, by cash, Jos. W. Beaman, treasurer's bond	10.00
175.	Jan. 19, by cash, C. L. Stevens, Journal for January	333.33
176.	Jan. 19, by cash, W. G. Jordan, stationery, etc.	80.00
177.	Feb. 21, by cash, C. L. Stevens, Journal for February	333.33
178.	March 10, by cash, C. L. Stevens, Journal for March.	333.33
179.	March 10, by cash C. L. Stevens, salary as sec'y.	150.00
180.	March 10, by cash, C. L. Stevens, salary as editor	100.00
181.	March 10, by cash, G. W. Wagoner, salary as treasurer	25.00
182.	April 13, by cash, C. L. Stevens, Com. Scientific Work	14.50
183.	April 13, by cash, J. H. Murrelle, stationery	11.25
184.	April 13, by cash, W. G. Jordan, stationery	26.26
185.	April 27, by cash, C. L. Stevens, Journal for April	333.33
186.	May 15, by cash, C. L. Stevens, Journal for May	333.33
187.	May 26, by cash, C. L. Stevens, Journal for June	333.33
188.	May 26, by cash, C. L. Stevens, salary as sec'y.	150.00
189.	May 26, by cash, C. L. Stevens, salary as editor	100.00
190.	May 26, by cash, G. W. Wagoner, salary as treasurer	25.00
191.	July 9, by cash, C. L. Stevens, Journal for July	333.33
192.	Aug. 15, by cash, F. G. Sairs, stamped envelopes	21.30
193.	Aug. 15, by cash, Murdock, Kerr & Co., registration book	10.00
194.	Aug. 15, by cash, C. L. Stevens, Journal for August	333.33
195.	Sept. 3, by cash, W. G. Jordan, printing	19.88
196.	Sept. 3, by cash, C. L. Stevens, Journal for September	333.33
197.	Sept. 3, by cash, C. L. Stevens, salary as sec'y.	150.00
198.	Sept. 3, by cash, C. L. Stevens, salary as editor	100.00
199.	Sept. 3, by cash, G. W. Wagoner, salary as treasurer	25.00
	Total	$5826.49

Total receipts $8300.53

Balance on hand $2474.01

Medical Defense Fund....$417.10

Medical Benevolence Fund 625.65

$1012.75

General Fund $1131.29

County societies that have paid:

Adams	21	Lancaster	131
Allegheny	537	Lawrence	34
Beaver	42	Lebanon	16
Bedford	16	Lehigh	60
Berks	101	Luzerne	103
Blair	64	Lycoming	96
Bradford	40	Mercer	42
Bucks	65	Mifflin	19
Butler	45	Monroe	16
Cambria	65	Montgomery	82
Carbon	21	Montour	18
Center	26	Northampton	77
Chester	61	Northumberland	18
Clarion	26	Perry	21
Clearfield	50	Philadelphia	1079
Clinton	18	Potter	21
Columbia	30	Schuylkill	59
Cumberland	42	Snyder	14
Dauphin	68	Somerset	22
Delaware	67	Susquehanna	31
Elk	29	Tioga	28
Erie	54	Union	17
Fayette	71	Venango	46
Franklin	48	Warren	33
Greene	23	Washington	101
Huntingdon	28	Wayne	14
Indiana	31	Westmoreland	43
Jefferson	38	Wyoming	12
Lackawanna	114	York	74
			4171

County societies that have not paid:

*Armstrong	28	*Crawford	35
*Beaver	2	McKean	33
			98

Total membership 1269

Medical Defense Fund—10 cents per member $417.10

Medical Benevolence Fund—15 cents per member 625.65

SUMMARY:

Receipts:

Balance on hand from last year ....$ 860.03

Received from 2 counties, dues for 1904-5...... 138.00

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*Armstrong, Beaver (balance) and Crawford paid their assessments during the session at Bedford Springs, but after the above report was submitted.

Received over-payment from Greene County ..	3.25	
Received from 58 counties having 4171 members.	7299.25	
		$8300.53
Of this amount the following are special funds:		
Medical Defense Fund....	$417.10	
Medical Benevolence Fund	625.65	
		$1012.75
Balance for society expenses ...		$7257.78
Expenditures:		
Publishing Journal for one year	$3999.96	
Salary of editor	400.00	
Salary of secretary	600.00	
Salary of treasurer	100.00	
Committee on Archives..	6.05	
Committee on By-Laws..	47.98	
Committee on Legal Matters	75.25	
Committee on Scientific Work	51.25	
Third Censorial District..	50.00	
Stenographers' services..	176.03	
Programs, Scranton Meeting	48.00	
Stamped envelopes, printing and stationery....	261.97	
Treasurer's bond	10.00	
		$5826.49
Balance on hand		$1431.29

Respectfully submitted,
G. W. WAGONER, Treasurer.

The Report of the Board of Trustees was deferred until a later meeting.

The Judicial Council, through its Chairman, Dr. Thomas D. Davis, Pittsburg, reported that no business of a judicial nature had been before them during the past year.

REPORTS OF INDIVIDUAL COUNCILORS.

Reports from the Councilors were received as follows, and on motion of Dr. A. R. Craig, Columbia, duly seconded, a vote of thanks was extended to the individual Councilors for their efficient work.

DR. HENRY BEATES, JR., PHILADELPHIA, COUNCILOR FOR FIRST DISTRICT:

I regret that circumstances over which I had no control prevented my discharging the duties of Councilor, and it is necessary, therefore, to confess to a certain degree of dereliction of duty. However, I visited the Delaware County Medical Society and found it to be in a most flourishing condition. There is a strong spirit of fraternity active among them, and they appreciate the necessity of effecting organization. The papers and discussions demonstrate a standard of scientific and practical qualification that is very gratifying to recognize.

The Philadelphia County Medical Society, as is well known, is in excellent condition. Its increase of membership is unparalleled. The meetings are interesting and well attended, and the papers generally possess scientific merit as well as practical value.

Expressing deep regret at the imperfections of this report, I have nothing further to add except that next year I expect and intend to submit a carefully prepared statement of work to be discharged as Councilor of this important organization.

THOMAS M. LIVINGSTON, COLUMBIA, COUNCILOR FOR SECOND DISTRICT:

I herewith present the following annual report for the Second Councilor District, comprising the counties of Dauphin, Lebanon, Lancaster, York, Adams, Cumberland, Franklin, and Fulton, the last named of which was without a medical organization at the beginning of the year.

I visited during the year the several county societies in my district and was most cordially received by them all.

For the information embodied in this report I am indebted to the courtesy of the secretaries and district censors of the several counties embraced therein.

Dauphin County: The secretary of the society reports one hundred and seventy-five registered physicians in the county with a membership in the county society of seventy-three. Meetings are held monthly with an average attendance of twenty. The officers of the society have been very active during the past year in their efforts to bring into the society the regular nonaffiliated physicians of the county.

The Academy of Medicine of Harrisburg, which is composed of the Dauphin County Society, owns the building in which it meets and has a library of several thousand volumes.

Lebanon County: On my visit to the Lebanon County Society in June last, I found an earnest and active society, as far as scientific work is concerned, of twenty members, holding monthly meetings, with an average attendance of eight. It has a Committee on Increase of Membership. The number of regular physicians in the county is forty-seven.

The first medical society in the county was organized more than half a century ago, and yet, full appreciation of the benefits to be derived from organization does not seem to be realized or understood by all the affiliated, and apparently much less by the nonaffiliated physicians of the county, as scarcely fifty per cent. of the regular physicians of the county are members of the county society. This is much to be regretted, as there are many good men in the county, whose presence in the society would greatly increase its value, and, in addition, would develop a spirit of unity and good will among the fraternity there, which does not now seem to exist.

Lancaster County: The secretary of the society reports the number of registered physicians in the county as one hundred and ninety-two; membership of society one hundred and thirty-five. Meetings are held monthly with an average attendance of forty-six. Many of the nonaffiliated are men who, in past years, were members of the society, but who, by a careless indifference in the matter of dues and by nonattendance at the meetings, allowed themselves to be dropped from the roll of membership. It is hoped that within the next year, the work of the Standing Committee on Increase of Membership will secure the reinstatement of many of this class. No recent action has been taken by the society on the subject of contract and lodge practice. The society has a small library. The meetings during the past year have been made interesting and profitable by the frequent presentation of clinical cases, specimens of morbid anatomy, and the reading and discussion of papers.

York County: The District Censor from York County, Dr. George E. Holtzapple, reports the number of registered physicians in the county as follows: Regular, one hundred and twenty-five; eclectic, one; homeopathic, thirteen; total, one hundred and thirty-nine. Membership of county society eighty-two, an increase of ten during the past year. One homeopath having renounced the exclusive dogma, has been admitted to membership.

The society meets monthly, has a fine up-to-date library of three thousand volumes, and has an active Standing Committee on Increase of Membership. It has also a committee appointed which will report at the next business meeting of the society, on the subject of lodge and contract practice.

Adams County: The secretary of the society reports that the number of physicians in the county legally qualified to practice is forty-seven; of this number thirty-nine are regular. Membership of county society is twenty-one with one application pending. Meetings are held quarterly with an average attendance of fourteen. There is no standing Committee on Increase of Membership, and no library. No action has been taken during past year on "contract or lodge practice." Secretary says the evil does not exist in Adams County.

Cumberland County: Dr. Langsdorf, secretary of the society, reports the number of regular physicians in county about forty-seven; membership of county society forty-three; meetings held quarterly with an average attendance of thirty; no Committee on Increase of Membership; no library. No action has been taken during past year on "contract or lodge practice."

Franklin County: From the secretary of the society I learn the number of regular physicians in the county is fifty-nine; membership of society, fifty-two. Meetings are held quarterly with a good attendance. The society has a library of about fifteen hundred volumes.

These records of membership in Cumberland and Franklin counties show a spirit of unity and loyalty on the part of the profession which is most commendable.

Fulton County: After a correspondence with each, individually, of the fourteen regular physicians of Fulton County, a meeting was called for July 18, to be held in McConnellsburg, the county seat. At the meeting nine of the physicians of the county were present, two of whom are members of adjoining county societies, but who will withdraw from the societies to which they now belong and affiliate with the organization of their own county. After a brief history, and the scheme stated, of the standard plan of organization as adopted by the State Society with the benefits both to the individual physician and otherwise to be derived from a county society briefly explained, an opportunity was given to each one present to express his views on the subject of organizing a society in Fulton County. The expression in favor of a society was unanimous. The organization was then effected in accordance with the Constitution and By-Laws of the State Society. I here desire to acknowledge my indebtedness to Dr. D. C. R. Miller, who was present, and whose experience in organization work in his own state of Maryland made his assistance valuable to us on this occasion.

In closing this report I desire to say that, from observation gained during my visits to the several societies in the Second Councilor District I believe that a more complete and perfect organization of the profession is possible within a comparatively brief period, if the individual physician, now in affiliation with a county society, could be impressed with his duty as stated in Chapter x., Section 8, of the By-Laws of the State Society; which says, "and systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it embraces every qualified physician in the county." It is the appreciation of personal responsibility and personal work which will tell most in the progress of organization—the completion of which, however, is a matter of time and education.

Censorial District meetings were held in the Fourth and Fifth censorial districts—in the latter at York on July 9, and in the former on July 23, at Inglerock, Dauphin County. Both meetings were fairly well attended.

I am much gratified in being able to state that the spirit of organization which is now so much in evidence throughout the country is very manifest in a majority of the counties embraced in the Second Councilor District.

DR. GEORGE W. GUTHRIE, WILKES-BARRE, COUNCILOR FOR THIRD DISTRICT:

I must confess to some delinquency regarding my duty as far as visiting the county societies is concerned. The State Society Meeting in Lackawanna County last year, as you will note by the report of the Secretary, was attended with marked increase in the membership in Lackawanna County, and almost as great an increase in our own county, Luzerne. I made but one visit to an adjoining county in anything like an offical capacity, and that was to Lackawanna County at a meeting held at Carbondale, about twenty miles from Scranton, where there was a concerted effort on the part of the medical profession to increase their fees. Their fees were ridiculously low; as low as twenty-five cents for an office consultation, fifty cents for a visit, and probably three dollars for a consultation and six dollars for an obstetric case, or something like this. The doctors began by raising their fees. That brought forth a storm of opposition on the part of organized labor, particularly the societies there who employed a contract physician, but the physicians held their ground. They wrote to Dr. J. N. McCormack to help them out, and he suggested a public meeting—a meeting of the physicians and the laity and the representatives of the labor organizations, the prominent people of the city and vicinity as well as the Lackawanna County Medical Society. Dr. McCormack could not come, but suggested that I be called upon. We had a very spirited meeting. We had a heart to heart talk, and a very interesting meeting; among those who attended were the mayor of the city, the editors of the newspapers, the leaders of the labor organizations, and I think that it was productive of good. I believe that the doctors held their ground. The labor organizations threatened to import a physician to take charge and do the contract work. Dr. Rea said to them, "If you do this, you are inconsistent with your principles, you are employing scab labor; your doctor will be a scab, and nothing but a scab." It was one of the best meetings that I ever attended.

That is the extent of my visiting. Medical affairs in our part of the state, we think, are in pretty good shape. The county medical societies are well organized and well attended, and we have, I think, a pretty good medical spirit.

DR. LUTHER B. KLINE, CATAWISSA, COUNCILOR FOR FOURTH DISTRICT:

I have visited three of the eight counties in my district. The following statistics have been gathered:

County.	Members 1905.	Members 1906.	Meetings	Average Attend'ce
Perry	20	21	4	10
Huntingdon	28	29	8	13
Northumberland	19	21	6	11
Snyder	20	23	6	12
Montour	18	17	6	6
Columbia	31	30	10	12
Total	136	141	40	64
Average.			6⅔	10⅔

The above report shows a net gain of five members during 1906.

No report was received from Mifflin County. Juniata County has no society; poor traveling facilities are said to be the main difficulty in the way of organization.

DR. WILLIAM S. ROSS, ALTOONA, COUNCILOR FOR FIFTH DISTRICT:

I regret to state that I was unable to comply with the constitutional requirement that a Councilor shall visit each of the counties in his district, so I made an effort to find out as much as I could from correspondence with the secretary of each of the county societies. I have reports from all but one, Dr. Brown, the secretary of the Westmoreland County Medical Society, being ill with typhoid fever. All the societies are growing and, I think, without exception, every county added one or more members during the year. I find that there is a lack of systematic effort among the physicians to increase their membership, a lack which seems very great in view of the fact that every county has a large proportion of its eligible physicians outside of the ranks.

Of the seven counties within the district reporting, four hold monthly meetings, which is very good and as much as was done by a large proportion of the county societies throughout the state until within the last year or two. I find again that nearly all of them, with the possible exception of Somerset, have revised their constitution, in accordance with the constitution already adopted by this Society. They have the work well in hand all over the district. We have had no case of discipline; only one society reports any suspensions and those were for non-payment of dues. I think I may say that, on the whole, the profession in our district is in a most excellent condition.

DR. GEORGE D. NUTT, WILLIAMSPORT, COUNCILOR FOR SIXTH DISTRICT:

I have visited none of the societies of my district, all of which are reported to be in fairly good condition. The following statistics have been gathered. It should be noted that while Sullivan has no society two of the physicians are members of the Lycoming County Society and three of Bradford.

Society	Organized	Date of Meeting	Place of Meeting	Average Attendance	No. of Members	Eligible Not Members
Lycoming	1849	Monthly	Williamsport.	27	91	20
Susquehanna	1838	Quarterly	Different Places	15	32	5
Bradford	1849	Monthly	Towanda	11	41	36
Union	1904	Quarterly	Different Places	9	17	3
Wyoming	1903	Bimonthly	Tunkhannock	6	12	10
Tioga	1861	Quarterly	Lawrenceville	18	36	30
Clinton	1866	Monthly	Lock Haven	7	16	12
Sullivan						14

DR. THOMAS D. DAVIS, PITTSBURG, COUNCILOR FOR SEVENTH DISTRICT:

Not being present at the meeting at Scranton last year, I did not get a clear idea of what was expected of a councilor, so I have not done so much work as some of the other councilors.

I have, during the year, visited three of the six county societies in my district. All the counties are organized, and the entire district is in first-class order, each holding meetings regularly and successfully.

DR. RICHARD ARMSTRONG, LOCK HAVEN, COUNCILOR FOR EIGHTH DISTRICT:

The counties of my district were so far removed that it was thought best to do what work could be done by correspondence. A letter was mailed each local secretary asking for information regarding his society. Two societies, Erie and Potter, failed to respond, but these are known to be in fairly good condition. Replies from the others are given below.

Crawford County: The society has thirty-six members. There are about twenty physicians in the county who are eligible but not members. Meeting every two months; first Wednesday of January, March, May, July, September, and November, with an average attendance of twelve. At the last meeting of the year we have a speaker from some large city, and have a banquet. At other meetings some member of the society reads a paper, which is discussed by those present. Members also report interesting cases.

Elk County: The society is composed of the physicians of Elk and Cameron counties. They meet on the second Thursday of each month, and now have enrolled thirty-one members with an average attendance of fourteen. There is a paper read at each meeting, also a subject for discussion. It is thought that every physician in the two counties that is eligible to membership, is a member of the Elk County Society, and all members take a fair interest in the society work. A committee of three is appointed at the annual meeting for the purpose of getting up a roster for the year, which is printed and sent to each member that he may see if he is down for a paper or some subject for discussion, which gives him ample time to prepare himself.

McKean County: The society, organized June 18, 1880, meets the first Tuesday in every month. Present membership is thirty-eight; average attendance about thirteen, and about twenty eligible physicians in the county, not members.

The society does not make out an annual program, but at each meeting the chairman designates a program for the next meeting. The meeting place is also designated at the same time, and may be Bradford, Kane, Mt. Jewett, or Smethport. One member resides in Forest County. McKean is included in the Northwestern Counties Medical Association, and many members are active at its annual meetings. McKean has also a partnership with the counties of Allegany and Cattaraugus in New York. These three joint societies hold an annual meeting in July of each year at the Bon Air Hotel, Rock City, N. Y. The meetings are open to all medical men, who care to visit the hotel at this time.

Warren County: The society consists of forty members; average attendance twelve. The society meets the Tuesday following the second Monday of every month. Four eligible physicians in the county are not members. All members appear to be interested in the society's work, and much interested in securing a suitable practice act in the next legislature, in keeping illegal practitioners out of the county, and in maintaining all honorable methods in practice of medicine.

Pledge for 1906:—

Resolve, That during the coming year I will do all in my power to assist in the uplifting of my profession and the upbuilding of my county medical society. I will devote the necessary two or three hours each month to attend the meetings, and will endeavor to prove myself an active and willing member.

I desire and resolve: To be more kindly tolerant of the opinon of my confrère, and will extend to every worthy colleague the degree of courtesy I would have him extend to me. I resolve to stand for true friendship, confraternity, and the highest type of professional honor, believing this to exemplify the only real type of success worthy of attainment. Our July code is that of a square deal. Our July creed is that of a gentleman.

ISAAC C. GABLE, YORK, COUNCILOR FOR NINTH DISTRICT:

The Councilor for the Ninth District respectfully reports that the profession has organized medical societies in Armstrong, Butler, Clarion, Indiana, Jefferson, and Venango Counties, with bright prospects of good work. In all of the counties named, except one, the membership during the past several years has been increasing. The records show that during the past decade the membership of the exceptional society referred to has been gradually decreasing until it almost went into a state of decadence. I have pleasure in reporting, however, that recently, through the stimulating influence of some of the most prominent physicians in the county, and other faithful workers, this local society has held regular monthly meetings, which have been well attended, and is now doing good work.

Since the committee appointed at Scranton found it impossible to divide the state into nine councilor districts and consign a councilor in all cases to the district in which he resides; and since some of the councilors, including myself, are not eligible for reëlection, having served as trustee for six consecutive years, therefore, for obvious reasons, I was consigned to a district too remote from my place of residence to have visited all the societies in the district assigned to me by the apportionment committee. In order to minimize expense I made but one visit to the Ninth District. I went to Punxsutawney, Jefferson County, on the 26th of July, and on the following day went to Reynoldsville, where the Jefferson County Society held its regular monthly meeting, to which were invited also the neighboring societies in the district. This meeting was one of exceptional interest. About forty physicians were present. After an interesting paper on "Cancer of the Stomach a Surgical Disease" was read by Dr. Robt. W.

Stewart of Pittsburg, and discussed by a number of the physicians present, Dr. George W. Wagoner of Johnstown, who was present by special invitation, and the Councilor for the district, in turn, also addressed the meeting, dwelling principally upon the subject of medical organization. Immediately after adjournment a sumptuous dinner was served, which proved a very pleasant social feature.

It is becoming more and more evident that such meetings are desirable especally in cases where a society lacks vitality. I have much pleasure in reporting the Jefferson County and all the other organized county societies in the Ninth Councilor District at this time in a healthy and prosperous condition.

It should be noted that Forest County, in which there is no medical organization, is in the Ninth Councilor District. Dr. William G. Morrow of Forest County, who is a member of the Venango County Society, writes me that of the eight physicians residing in Forest County, eligible to membership in a component society, three are members of the Venango County Society and one of the McKean County Society. The other four, two of whom reside at Marienville, do not have membership in any society. By reason, however, of the small number of physicians residing in Forest County, in the judgment of your councilor, it would not be wise, at this time to attempt to form a society in that county. Those not already members should be elected to membership in a regularly organized society, in one of the neighboring counties.

Reports from District Censors were received and ordered printed.

REPORTS OF DISTRICT CENSORS.

DR. ALBERT M. EATON, PHILADELPHIA, CENSOR FOR FIRST DISTRICT:

Speaking for our Philadelphia County Medical Society, I would state that, since the visit of Dr. McCormack, our Committee on Increase of Membership thought it best for Philadelphia to tentatively work out a plan of its own for increasing membership. This committee consists of five members from the central body and one from each of its six branches.

It is the duty of each member of the committee to make a personal appeal to every physician residing within his district, whose name has been recommended for membership by the committee, or mail a card showing the advantages of membership, and also enclosing a circular letter extending an invitation to become a candidate for membership.

The office of our county prothonotary is visited annually, the names of all regular physicians, who have located in our city during the preceding twelve months, are obtained, and a personal letter is sent inviting each of them into membership. Since its adoption this plan has brought to us over two hundred members.

DR. JACOB S. HACKNEY, UNIONTOWN, CENSOR FOR SEVENTH DISTRICT:

As Censor for Fayette County, I report that, unfortunately, we have had no district meeting, but, if it is in order, I can report for the Fayette County Society that it has been growing. As soon as we know of a new physician locating in Fayette County, his record is looked up, and, if eligible to join the county society, he is invited to become a member of our society. At the present day, I know of but one or two eligibles in the county who are not members.

The county society has changed its meetings from quarterly to bimonthly, and meets alternately at opposite ends of the county. We have been having very interesting meetings. In Uniontown, the physicians all assembled and on September 1, 1905, made an all round increase of about fifty per cent. in fees. The county society took action regarding the fee for insurance examination. By resolution of the society, a circular letter was sent to each member, who was asked to sign, agreeing to make no insurance examinations for a fee of less than five dollars. I am glad to say that only a very small minority of the society refused to sign it, and we are enforcing it the best we can. A penalty was made (but the time has not been long enough for it to go into effect) that a fine of five dollars should be imposed upon a member of the society for the first offense in making an examination for less than five dollars, and then, if he still persisted, it would result in a dismissal from the society. Since that went into effect, there has been but one meeting of the society and no action was taken.

We are proud of our society; we have eighty-five members, and in a year from now hope to have two delegates instead of one.

The Report of the Committee on Scientific Work was presented by the Chairman, Dr. Theodore B. Appel, Lancaster, and on motion received and referred to the Business Committee.

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

To the House of Delegates, Medical Society,
State of Pennsylvania:—

As a result of the action of the Executive Council, during the meeting of this Society at Scranton, in adopting the present Ordinances and By-Laws, the old Committee on Scientific Business was superseded by the present Committee on Scientific Work; its make up was radically changed, and the scope and manner of work was considerably altered. Under Article VII. of the Ordinances, the Executive Council, by resolution, provided for three sections, *i. e.*, (1) medicine, (2) surgery, and (3) the allied specialties of diseases of the eye, ear, nose and throat; the retiring President appointed the first section officers as provided by Chapter V. Section 1 of the By-Laws. Under the new order, the labor of soliciting and selecting scientific papers for the meeting passed from the general committee into the hands of the officers of the several sections, and the result of their work is before you in the official program already in your hands. This program provides for a general symposium, including all three sections, for Wednesday afternoon, on the Thyroid Gland with six papers; the section on Medicine has before it a list with thirty-eight papers; on Surgery, thirty-three; and the Specialty Section, fifteen; making a grand total of ninety-two papers, in addition to the six stated orations and numerous discussions.

In developing the program and arranging for the work of the sections, some of the provisions of the By-Laws have been violated with the idea of providing a more homogeneous program. In addition, in the make up of the present committee, the retiring President, acting upon the original draft of Chapter vii., Section 2, and not on the section as finally adopted, appointed a chairman of this committee, and the work of the committee was well under way before the Secretary of the Society discovered the error. It was decided to continue the committee as constituted.

A meeting of the committee was held in Philadelphia on February 2, 1906, to organize and make preliminary arrangements. At this meeting, the joint symposium was provided for and the subject chosen; the arrangement for the opening session on Tuesday morning, as it appears in the official program, was decided upon, the President's Address being placed therein, as it seemed to give more dignity to this annual feature than it has received in the past; and the annual orations were placed on the section programs instead of before open session of the Society in violation of Chapter i., Section 1 of the By-Laws, because it seemed to the committee more suitable, and we felt that some latitude would be given us in our efforts to arrange the program under the new order. Later the Oration on Neurology was transferred from the Medical to the Surgical Section because the orator desired to discuss his subject from the standpoint of the surgeon.

As a result of the year's work, we believe that certain changes should be made in those sections of the By-Laws governing this committee, in order to simplify the work. We believe that to make the relation between the section and its officers more intimate as well as to give more vitality to the section itself, provision should be made for the election of the officers directly by the section rather than that these officers should be appointed by the President of the Society. This would involve certain provisions in reference to the registration of the members of the sections similar to those in vogue in the American Medical Association. With these objects in view we make the following recommendations:—

1. Amend Chapter i., Section 1 of the By-Laws by striking out "and the orations" thereby leaving this matter to the committee.

2. Amend Chapter v., Section 1 by striking out "and the chairmen and secretaries of such sections as are provided for by the House of Delegates," that is, taking away the appointing of these officers and making way for an amendment providing for their election.

3. The adoption of a new section to Chapter iv., "Section 5. The chairmen and secretaries of all sections provided for by action of the House of Delegates shall be elected by the several sections at executive sessions held immediately before the adjournment of the session on the second day of the annual meeting."

4. Amend Chapter vii., Section 2 by inserting, "and a chairman appointed annually by the President" at the end of the first sentence.

5. That, in case the above amendments be approved, a committee of three be appointed by the President with power to draw up regulations for the proposed registrations of section members, and for the election of section officers; such regulations to become operative at the next annual meeting of this Society.

In addition to the meeting of the committee held in Philadelphia, it became necessary for the Chairman to visit Bedford in July for consultation with the local Committee on Arrangements. Vouchers for the expenses by members of the committee incurred are appended.

Respectfully submitted,
Wm. H. Hartzell.
W. L. Estes.
John H. Jopson.
James H. McKee.
Samuel D. Risley.
Robert Milligan.
Simon H. Gump.
Theodore B. Appel, Chairman.

The Report of the Committee on Archives was read by the Assistant Secretary, Dr. Theodore B. Appel, Lancaster, and on motion received and ordered printed.

REPORT OF THE COMMITTEE ON ARCHIVES.

During the last year an additional copy of the desired old Transactions, Volume XVIII. (1886) was received through the courtesy of Dr. Robert B. Watson, Lock Haven. This has been deposited with the other volumes in our possession in the Library of the University of Pennsylvania. One hundred and three volumes have been received from Dr. F. Schill, Jr., Johnstown, and are now in the hands of the Secretary. Twenty of these were Volume XXVII. (1896), of which we previously had but four copies. We have had one or two requests for old volumes but none that we felt we could honor, since they were for copies of which we possessed none or very few.

The society has no copy for 1848, '49, '50, '54, '55, '65, '66, '67, '68, and '69. It has but one copy for any single year previous to 1880. For 1883 it has six copies; for 1884, three copies; for 1885, five copies; for 1886, two copies. Copies for any year since 1886 are not desired. Copies for 1880, '81, and '82 are not especially desired. Copies for any other dates will be thankfully received, and necessary transportation charges paid.

Members wishing further knowledge regarding back numbers are referred to our report for 1905 printed on page 44 of the October, 1905, number of the PENNSYLVANIA MEDICAL JOURNAL.

A. O. J. KELLY, Chairman.
C. L. STEVENS.

The Report of the Committee on Arrangements was presented by the Chairman, Dr. Simon H. Gump, Bedford, and upon motion received, and the thanks of the House of Delegates extended to the Committee.

REPORT OF THE COMMITTEE ON ARRANGEMENTS.

Your Committee on Arrangements has held numerous and harmonious meetings and has endeavored to do its best to be prepared to meet you gentlemen and ladies when you should come. We have worked earnestly in all the preparations to entertain you and make your stay pleasant, constantly looking forward with much solicitation in greeting you, and trust that your sojourn may be of such a character that you will return amply repaid for your coming.

S. H. GUMP, Chairman.

The Report of the Committee on Teaching of Physiology and Hygiene in Public Schools was read by the Assistant Secretary, Dr. T. B. Appel, Lancaster, and upon motion received and referred to the Board of Trustees.

REPORT OF THE COMMITTEE ON TEACHING OF PHYSIOLOGY AND HYGIENE IN THE PUBLIC SCHOOLS.

Mr. President and Members: The Committee on Teaching of Physiology and Hygiene in the Public Schools conducted its work during the past year by correspondence with the Committee on the Teaching of Hygiene in Public Schools of the American Academy of Medicine, by correspondence with the State Board of Health of Michigan which publishes a monthly publication entitled "Teacher's Sanitary Bulletin," by correspondence between the members of the committee, and by a meeting of the committee in Philadelphia in June.

Early in the year your committee communicated with the State Superintendent of Public Instruction at Harrisburg offering its advice and assistance in the practical teaching of physiology and hygiene in the public schools of the commonwealth, who replied that his department would be glad to welcome this committee's endeavors in simplifying and improving the present condition of affairs, and offering his coöperation as far as he was able.

The committee, when it met in Philadelphia, had three plans under advisement for introducing a system of properly teaching these branches and decided unanimously upon one which it has every reason to believe will prove acceptable and efficacious. This plan was made known to the Superintendent of Public Instruction by the following letter:

"Dr. Nathan C. Schaeffer,
Supt. of Public Instruction,
Harrisburg, Pa.

"Dear Sir:—In order to secure uniformity in the text-books on physiology and hygiene used in the public schools and to insure text-books that are efficient and up to date, this committee has decided to select from among the large number of books now being used in the state, a book for each grade, which in its opinion presents the subject matter in the most comprehensive style and truest wording.

"The authors of these three books will then be communicated with and if any corrections, alterations, or additions are deemed necessary to make the books more valuable, the authors will be requested to make such changes. The committee intends to stamp its approval on the books chosen when revised, and believes that if the Superintendent of Public Instruction will do likewise it will be but a matter of a short time until they are adopted generally by the school boards throughout the state.

"May we have an expression from you on this matter at an early date and will you permit your views to be incorporated in our report to the state society at the annual meeting next month?"

To which the following reply was received:

"September 4, 1906.

"Dr. Edward Stieren,

"Dear Sir:—I deem it a matter of great importance that the text-books on physiology and hygiene should teach truth and nothing but truth. The laws of Pennsylvania prevent me from taking any part in the introduction of text-books; hence, I can not participate in the plan which you propose.

"The main difficulty in teaching this subject is that teachers and others confound knowledge with virtue. To know the right is one thing; to do the right is a very different thing. A knowledge of the effect of stimulants and narcotics does not prevent physicians from misusing the same; and it is easy to expect too much from the instruction in physiology and hygiene. If the knowledge which the teacher imparts is not transmitted into conduct and life, it will not bear fruit in virtues like temperance and sobriety. If your committee can help the teachers at this point, you will render the schools a very important service.

"Yours truly,
"N. C. SCHAEFFER."

The plan is before the society. If favorably received and the committee instructed to work along these lines, it requests that an appropriation of $50.00 be made for the coming year to cover expenses of text-books for reviewing, stenography, etc.

EDWARD STIEREN,
Chairman for the Committee.

Upon motion of Dr. Alexander R. Craig, Columbia, duly seconded, the Report of the Committee on Transportation and place of Meeting was made the first order of business after the election of officers on Wednesday morning.

The Report of the State Board of Medical Examiners was presented by the Chairman, Dr. Henry Beates, Jr., Philadelphia, and upon motion received and ordered printed.

REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS.

Mr. President and Members: The State Board of Medical Examiners representing this Society begs leave to respectfully report that at the session of examination of candidates for licensure, June 19-22, 1906, four hundred and fourteen applications were made. These represented forty-one colleges. Many states of the Union and two foreign countries, Vienna and Italy, were represented.

Of this group of candidates, twelve failed to qualify; one was expelled, being caught in the act of cheating; fifty did not obtain the required general average of 75 per cent., and the remainder, three hundred and fifty-one, were recommended to the Medical Council for licensure. The highest general average, 91.86 per cent., was made by Dr. William Gray Turnbull, a graduate of the University of Pennsylvania.

Before proceeding further with this report, especial attention is called to the fact that the system in vogue in conducting the examinations is such that the Board of Examiners is in total ignorance both as to the personality of the candidate and the school from which he obtained his medical degree. Therefore, grading can in no way be influenced by partiality. This point it is desired to emphasize because the following portion of the report is compiled *after* the Board of Examiners has held its sessions and prepared and filed its report with the proper authorities of the Commonwealth, and the results given below are obtained from the Medical Council, which body exclusively has the records of the applicants, and, therefore, alone is able to classify and compute the figures to be given.

SUMMARY OF EXAMINATIONS HELD AT PHILADELPHIA AND PITTSBURG, JUNE 19, 20, 21, 22, 1906.

Colleges.	Number.	Failures.	Percentage of Failures.
Jefferson Med. Coll.	111	10	9+
Medico-Chirurgical Coll.,	70	5	7+
Univ. of Pennsylvania,	59	3	5+
West. Penna. Med. Coll.,	53	7	13+
Baltimore Med. Coll.,	17	4	23+
Women's Med. Coll., Pennsylvania,	14	2	14+
Temple Coll. Med. Dept.,	10		
Coll. of Phys. & Surg., Baltimore,	10		
Johns Hopkins Univ.,	5		
Univ. of Maryland,	5	2	40
Univ. of the South,	4	3	75
Univ. & Bellevue Hosp. Med. Coll.,	4		
Starling Med. Coll., Ohio,	3	1	33+
Howard Univ.,	3	2	67—
Ohio Med. Coll.,	**2**	**1**	**50**
Univ. of Buffalo,	2		
Coll. of P. & S. of City of N. Y.,	2		
Leonard School of Med.,	2	1	50
Maryland Med. Coll.,	2	1	50
Geo. Washington Univ.,	2	1	50
Univ. of Tenn.,	1		
Royal Univ. of Budapest,	1	1	100
Univ. of Vermont,	1		
Univ. of Virginia,	1		
Univ. of Michigan,	1		
Barnes Med. Coll.,	1		
Columbian Univ., Washington, D. C.,	1		
Univ. of Turin, Italy,	1	1	100
Univ. of Naples, Italy,	1	1	100
Kentucky Univ. M. D.,	1	1	100
Long Island Coll. Hosp.,	1		
Amer. Med. Miss. Coll., Chicago,	1	1	100
Univ. of Louisville,	1		
Univ. of Illinois,	1		
Cleveland Coll. of P. & S.,	1		
Baltimore Univ. Sch. of Med.,	1	1	100
Kentucky School of Med.,	1	1	100
Harvard Univ. Sch. of Med.,	1		
Illinois Med. Coll.,	1		
Cornell Univ.,	1		
Tufts Coll. Med. School,	1		
Total (41 Colleges)	401	50	13—

Passed,	351
Failed,	50
Expelled,	1
No papers,	13
Total,	415

Highest average—91.86%, William Gray Turnbull, University of Pennsylvania.

STANDING OF COLLEGES AS TO FAILURES.

Temple Coll., Med. Dept.	No failures.
University of Pennsylvania	5 5/59%
Medico-Chirurgical Coll.	7 1/7%
Jefferson Med. Coll.	9 1/111%
West. Penna. Med. Coll.	13 11/53%
Woman's Med. Coll.	14 2/7%

STANDING OF COLLEGES AS TO GRADE.

Univ. of Pennsylvania	80.96%
Woman's Med. Coll.	80.62%
Temple Coll., Med. Dept.	79.03%
Medico-Chirurgical Coll.	78.52%
Jefferson Med. Coll.	78.28%
West. Penna. Med. Coll.	77.93%

It may be well to direct attention to the analysis of the grades made in all the subjects by the graduates, and mention the fact that, in the fundamental subjects of anatomy, physiology, chemistry, and pathology, about fifty per cent. of the candidates failed, and that, if it were not for the high marks attained in the practical subjects of medicine, obstetrics, surgery, hygiene, and diagnosis, a very large number now passed would have failed. So prominent is this annual result that one of two conclusions must necessarily be reached. Either the teachers in these fundamental subjects failed utterly to teach the fundamental principles as well as the applied features thereof, because the questions submitted are especially of this character, or the students fail to comprehend these essential sciences. The matter is so serious, as is self-evident, and has prevailed without any practical variation ever since the Practice Act has been in force, that it demands serious investigation.

No one can deny that the character of these examinations, which was necessitated because of those influences which rendered the Act of Assembly governing practice in this Commonwealth at best a compromise measure, serves more to test the memory, and relatively little as to the knowledge and the ability of the licentiates and as to their fitness to practice medicine. It can not be denied for one moment that an individual who can memorize a group of symptoms fails utterly in understanding their true character and import, if not familiar with the structures of the human body, the functions of the part or parts involved by disease and injury, and also the chemical and pathological changes which are thereby occasioned.

It seems the function of this organization to interest itself in this phase of medical college work, and to intelligently use its influence to correct those conditions which results seem to demonstrate to be prevalent.

HENRY BEATES, JR.,

For the Board of Medical Examiners representing the Medical Society of the State of Pennsylvania.

Dr. David I. Giarth, Kittanning, reported having attended, as a delegate from this Society, the last meeting of the New York State Medical Society.

The Assistant Secretary, Dr. Theodore B. Appel, Lancaster, read a communication from the Northampton County Medical Society, which society, on January 19, adopted the following resolution: "The Medical Society of Northampton County refers to the Medical Society of the State of Pennsylvania the advisability of instructing its Board of Examiners to endeavor to secure a rule by the Medical Council that each Board of Examiners will decline to examine any applicant who has failed before one of the other boards."

Dr. Henry Beates, Jr., Philadelphia, stated in this connection that the Medical Council has taken action in this matter, and adopted a rule that when a candidate has failed before one of the three boards, he can not thereafter be examined by either of the other boards.

A communication from the American International Congress on Tuberculosis, inviting the Society to send delegates to their next meeting was read and on motion referred to the Business Committee.

Dr. P. Y. Eisenberg, Norristown, presented the case of a physician applying for membership in the Montgomery County Medical Society, who had been contributing articles to a corporation manufacturing medical preparations, and asked for advice as to whether or not the society should admit him, which in accordance with the By-Laws was referred to the Judicial Council.

Dr. David H. Strickland, Erie, presented certain communications in reference to the Warren Sanatorium, which in accordance with the By-Laws were referred to the Judicial Council.

Drs. William Edgar Darnall, Atlantic City, and H. H. Sherk, Camden, regularly certified delegates from the Medical Society of New Jersey, were accorded the privileges of the floor, as was also Dr. W. Preston Miller, Hagerstown, Md., a regularly certified delegate from the Medical and Chirurgical Faculty of the State of Maryland.

Dr. John B. Carrell, Hatboro, asked whether a medical society in agreeing upon a fee bill was not violating the law. The question was referred to the Judicial Council.

On motion, the House of Delegates adjourned until 8 A. M., Wednesday, September 12, 1906.

WEDNESDAY MORNING, SEPTEMBER 12, 1906.

The House of Delegates was called to order at 8:30 A. M. by President Hartzell. The roll showed forty-eight members present.

Dr. A. A. Long, York, presented the name of Dr. Isaac C. Gable, York, for President. It was moved and seconded that the nominations be closed and that the Secretary be instructed to cast the ballot, which was done and Dr. Gable was unanimously elected President.

The following nominations were made for Vice-Presidents: Dr. Adolph Koenig, Pittsburg, presented the name of Dr. Charles Emmerling, Pittsburg; Dr. Samuel G. Statler, Alum Bank, presented the name of Dr. Simon H. Gump, Bedford; Dr. Americus R. Allen, Carlisle, presented the name of Dr. Philip R. Koons, Mechanicsburg; Dr. Alexander G. Fell, Wilkes-Barre, presented the name of Dr. Henry M. Neale, Upper Lehigh; Dr. John T. Cass, West Lebanon, presented the name of Dr. William B. Ansley, Saltsburg. Dr. Heckel moved that the nominations be closed which was done and a ballot cast which resulted in the election of Drs. Emmerling, Ansley, Koons, and Neale, in the order named, for First, Second, Third, and Fourth Vice-Presidents.

Dr. C. L. Stevens, Athens, was nominated for Secretary, and on motion the nominations were closed and the Assistant Secretary directed to cast the ballot, which was done and Dr. Stevens was declared elected.

Dr. George W. Wagoner, Johnstown, was nominated for Treasurer, and on motion the nominations were closed and the Secretary directed to cast the ballot, which was done and Dr. Wagoner declared elected.

Dr. Theodore B. Appel, Lancaster, was nominated for Assistant Secretary, and on motion the nominations were closed and the Secretary was instructed to cast the ballot, which was done and Dr. Appel declared elected.

The following were nominated for Trustees and Councilors for the term of three years: Drs. David H. Strickland, Erie; William S. Ross, Altoona; and John B. Donaldson, Canonsburg. The nominations were closed and motion was made that the Secretary cast the ballot for the Trustees and Councilors, which was done and Drs. Strickland, Ross and Donaldson were duly elected.

Dr. C. L. Stevens, Athens, was nominated for Editor of the JOURNAL, and on motion the nominations were closed and the President directed to cast the ballot, which was done and Dr. Stevens declared elected.

It was decided that the District Censors nominated by the several county societies be elected, and on motion of Dr. Theodore B. Appel, Lancaster, it was ordered that in case of no nomination having been reported, the man who had previously served as District Censor be reëlected. For list of District Censors thus elected see page 2.

The following were nominated as Members of the House of Delegates of the American Medical Association for two years: Drs. Israel Cleaver, Reading; William T. Williams, Mt. Carmel; Theodore P. Simpson, Beaver Falls; Samuel Wolfe, Philadelphia; Adolph Koenig, Pittsburg. Motion was made that the nominations be closed and ballot was cast which resulted in the election of Drs. Cleaver, Koenig, Williams and Wolfe.

The following nominations for alternate members of the House of Delegates of the American Medical Association were made: Drs. Franklin Brady, Philadelphia; John B. McAlister, Harrisburg; Anthony F. Myers, Blooming Glen; Fremont W. Frankhauser, Reading; John Fay, Altoona; John B. Lowman, Johnstown; George G. Harman, Huntingdon; J. M. Anders, Philadelphia; Christian B. Longenecker, Philadelphia; Jacob S. Hackney, Uniontown; Theodore B. Appel, Lancaster; Thomas G. Cashman, Washington; Ewing W. Day, Pittsburg; Jefferson H. Wilson, Beaver; Theodore P. Simpson, Beaver Falls; Simon H. Gump, Bedford. Motion was made that the nominations be closed and the Secretary was instructed to cast the ballot, which was done and the alternates named above were declared elected, the first eight for two years and the last eight for one year.

On motion of Dr. J. F. Schamberg, Philadelphia, the Secretary, Assistant Secretary and President were authorized to arrange the alternates in a way most likely to provide for a full representation of this Society in the House of Delegates.

The Report of the Committee on Transportation and Place of Meeting was read by the Chairman, Dr. A. M. Eaton, Philadelphia. He mentioned the difficulty of securing satisfactory rates from the Trunk Line Association, and expressed the hope that next year the rates would be such that we would not need to secure special rates. He gave the names of three places suggested for the session next year, Altoona, Reading, and Uniontown. Dr. Jacob S. Hackney withdrew the name of Uniontown, expressing the hope that some time in the near future the Society might meet there. A ballot was then taken for the place of meeting which resulted in favor of Reading.

Dr. John B. Carrell, Hatboro, offered the following resolution, which was referred to the Board of Trustees:

Whereas, Owing to the high tone adopted by the medical profession, and the tendency to suppress the commercial instincts, as well as for reasons generally applicable to man, it occasionally happens that physicians, or members of their families directly dependent on them, are in great distress on account of poverty or disability, and

Whereas, It is highly consistent that the organization of physicians in a state should take cognizance of such matters, and deal practically with them, therefore be it

Resolved, That the President appoint a committee of five members of the State Society to consider and report upon a plan for suitable provision, by the establishment of a home or otherwise, for disabled and infirm members and those directly dependent on them, who are in poverty or distress.

A preamble and resolution adopted by the Berks County Medical Society July 10, 1906, regarding a certain hospital, was presented with the request that the same receive the approval of the House of Delegates, and was referred to the Judicial Council.

The Business Committee reported favoring the amendments to the By-Laws suggested in the Report of the Committee on Scientific Work. After considerable discussion the House adopted the following amendment without a dissenting voice:

1. Amend Chapter I., Section 1, by striking out from the seventh and eighth lines the words "and the Orations."
2. Amend Chapter V., Section 1, by striking out from the fourth, fifth and sixth lines the words "and the chairmen and secretaries of such sections as are provided for by the House of Delegates."
3. The insertion of a new section in Chapter IV. as follows:

"SECTION 5. The chairmen and secretaries of all sections provided for by action of the House of Delegates shall be elected by the several sections at executive meetings held immediately before the adjournment of the sections on the second day of the annual session of this Society."

4. Amend Chapter VII., Section 2, by adding to the end of the first sentence the words "and a chairman appointed annually by the President."

The President was then authorized to appoint a committee of three with power to draw up regulations for the registration of section members, and for the election of section officers, such regulations to become operative at the annual session of 1907.

The Business Committee reported recommending the sending of delegates to the American International Congress on Tuberculosis at its meeting to be held in New York, November 14, 15 and 16, 1906, and that the delegates be instructed to use their influence in favor of ethical management of said association. The recommendation was on motion adopted by the House.

Dr. T. B. Appel, Lancaster, introduced the following: Be it resolved, that the House of Delegates approve of the idea of making an annual meeting of the secretaries of the county societies a feature of the session of this Society and direct the Committee on Scientific Work to make provision for such a meeting next year. The resolution was referred to the Business Committee and after its approval was on motion adopted by the House.

Dr. A. M. Eaton introduced the following: *Resolved*, That two delegates be appointed by the President to a conference to be held in New York on November 15, for the purpose of devising ways and means for the suppression of quackery and for the preservation of the public health and morals. This resolution was referred to the Business Committee and after its approval was on motion adopted by the House.

The Trustees reported rules to regulate the Medical Defense Fund provided for in Chapter VIII., By-Laws, Medical Society of the State of Pennsylvania, which were on motion adopted by the House as follows:—

1. The Council shall at each annual meeting appoint an attorney-at-law for the term of one year as counsel for this Society.

2. The Council may upon request, and in compliance with the conditions hereinafter named, assume the defense for alleged malpractice brought against members of this Society.

3. The Council shall not undertake the defense of any suit brought for acts committed by a doctor prior to his qualification as a member of this Society.

4. Any member desiring to have the Society defend him in a suit for alleged malpractice shall first present his case in writing to the censors of his county medical society who shall advise concerning the validity of his claim. A majority of the censors of his county society having submitted the documents in the case, and having certified in writing their approval of his defense, he may make application for defense to the Council through the Secretary of the State Society. If the Council shall approve his application, and undertake his defense, he shall then sign a contract, vesting in the Council the authority to conduct the defense of said suit, and shall make such other arrangements as the Council may require; provided that no compromise shall be made without the consent of the accused, and provided further that nothing in the foregoing shall conflict with united action in the defense by the officials of any component county society, or of any corporation organized for this specific purpose in which he may be insured.

5. The Council by a majority vote of all its members shall contract with said applicant to take full charge of said suit, to furnish all necessary legal services, to furnish all medical expert services, and to pay all necessary expenses of the accused, excepting expenses for witnesses called to testify to questions of fact. Provided, that if the accused is insured in a corporation organized for the legal and financial defense of physicians, the foregoing responsibility of the Council may be divided with said corporation; or the member may be allowed a certain sum of money satisfactory to both Council and member for part of his defense expenses and the Society shall be relieved of all responsibility. The Council shall not obligate the Society to the payment of any damages awarded by the decree of Court or upon compromise.

6. The Council shall in each case name the sum for the compensation of the attorney.

The Trustees reported recommending that the Medical Benevolence Fund provided for in Chapter IX., By-Laws, be allowed to accumulate for a period of three fiscal years before any distribution be made. The recommendation was, on motion, adopted by the House.

The Trustees also reported adversely on the request from the Committee on the Teaching of Physiology and Hygiene in the Public Schools for an appropriation of $50.00, which request was referred to the Trustees by the House. The recommendation of the Trustees was adopted.

Dr. Lowell M. Gates, Scranton, moved that the Committee on the Teaching of Physiology and Hygiene in Public Schools be continued. The motion was seconded, discussed by Drs. Henry Beates, Jr., L. M. Gates and Jacob S. Hackney, and lost.

Dr. Henry Beates, Jr., moved that the Committee be discharged with thanks. Motion carried.

The following bills were read and referred to the Trustees for payment:—

Edward Stieren Chairman, Com. on Teaching of Phys. and Hygiene in Public Schools	$26.50
Whitehead & Hoag Co., Buttons and Badges	29.88
C. L. Stevens, Secretary, Office expenses for past year	31.65
T. M. Livingston, Councilor, Second District	21.60
I. C. Gable, Councilor, Ninth District	17.72

A communication from Dr. J. M. Anders, a member of the committee to solicit funds for a proper memorial to the late Dr. N. S. Davis of Chicago, founder of the American Medical Association, was read and referred to the Trustees with the suggestion that the county medical societies be advised of the effort to raise this fund and the members be asked for voluntary contributions.

On motion, the following committees were continued for another year: Committee on Transportation and Place of Meeting, Committee on Malpractice, Committee on Credentials of the House of Delegates.

On motion of Dr. A. R. Craig, the Trustees were instructed to fix the salaries of the Secretary and Treasurer, and the President and Secretary were empowered to pay salaries, fixed charges and necessary bills contracted *ad interim.*

On motion of Dr. Henry Beates, Jr., the Secretary was instructed to write Dr. Richard Armstrong, Lock Haven, expressing the appreciation of the Society for his valuable services rendered the Society.

Dr. A. R. Craig offered the following resolutions prepared by Dr. Theodore Diller and read at the close of his paper, before the Society yesterday morning, which resolutions were referred to the Business Committee:

Whereas, Under existing conditions, inebriates, dipsomaniacs, and drug habitués, can not be adequately treated in the State of Pennsylvania, because of the lack of any "proper hospital or asylum," such as is contemplated by the Inebriate Act of April 9, 1903.

Resolved, By the Pennsylvania State Medical Society, that the Legislature of this State be petitioned to erect, equip and operate, a "proper hospital or asylum" for inebriates, dipsomaniacs, and drug habitués, and to amend our present law to meet the requirements of such an institution.

Resolved, That the President of the Society be directed to appoint a committee of nine members of the Society to be known as the "Committee on Inebriate Hospital" who shall be authorized and instructed to present the foregoing resolutions to our State Legislature together with such facts and arguments as may in their opinion illuminate the subject.

House adjourned to meet Thursday morning at 8:30.

THURSDAY MORNING, SEPTEMBER 13, 1906.

The House was called to order by the President, Dr. William H. Hartzell, at 8:30 A. M.

On motion of Dr. A. R. Craig, roll call was dispensed with.

The minutes of the meetings of Monday evening and Wednesday morning were read by the Assistant Secretary, Dr. T. B. Appel, corrected, and approved.

A communication was read by the Secretary, Dr. C. L. Stevens, from Dr. Israel Cleaver of Reading, asking that he be allowed to resign as a member of the House of Delegates of the American Medical Association in favor of Dr. Fremont W. Frankhauser, Reading. On motion of Dr. John B. Roberts, seconded by Dr. A. R. Craig, the resignation of Dr. Cleaver was accepted. Dr. Fremont W. Frankhauser, Reading, was then duly elected a member of the House of Delegates of the American Medical Association for two years, and Dr. Israel Cleaver of Reading, was elected his alternate.

The Trustees reported regarding the resolution of Dr. John B. Carrell, presented to the House of Delegates on Wednesday, and referred to the Trustees, recommending that the resolution be postponed until next year as the Medical Relief Fund provided for in Chapter IX. of the By-Laws seems to cover this matter.

The Trustees reported that a committee appointed by them had examined the books of Treasurer Wagoner, had verified the accounts with their vouchers in detail, and had found them correct.

The Business Committee reported favorably on the resolutions prepared by Dr. Diller and offered yesterday by Dr. Craig, providing for a Committee on Inebriate Hospital. On motion the resolutions were adopted as presented and the President authorized to appoint the committee.

Dr. A. M. Eaton, Philadelphia, presented the following resolution at the request of the Philadelphia delegates, which was on motion referred to the Business Committee:—

Resolved, That a committee of five, three of whom shall be ex-presidents of this Society, be appointed to communicate with the several religious bodies meeting in convention annually in Pennsylvania, requesting their coöperation in suppressing the widespread sale of "harmful and ofttimes fatal nostrums," by declining to publish the advertisements in their journals, more especially of preparations containing alcohol, cocain and other poisonous narcotics.

Dr. Jay F. Schamberg, Philadelphia, presented the following resolution, which was on motion referred to the Business Committee:

Resolved, That the Medical Society of the State of Pennsylvania in session September 13, 1906, at Bedford Springs, reaffirms, its confidence in the efficiency of vaccination against smallpox, and urges the Committee on Public Policy and Legislation to resist any efforts that might be made to weaken the vaccination laws of Pennsylvania.

The Judicial Council reported as follows regarding the matter of membership in the Montgomery County Medical Society, presented by Dr. Eisenberg, Monday evening, and referred to the Council: The foundation of the medical profession as now organized is the county society and each society has within bounds control of the selection of its own members. See Chapter X., Sections 3 and 4 of the By-Laws.

The Trustees reported regarding a communication from Dr. J. M. Anders, relative to the raising of a fund for a proper memorial to the late Dr. N. S. Davis, and referred to the Trustees, recommending that Dr. Anders have the privilege of soliciting contributions for this fund from members through the secretaries of the county societies, or through the columns of the JOURNAL. The recommendation of the Trustees was adopted and the Secretary instructed to so notify Dr. Anders.

The Judicial Council reported regarding a communication in reference to the Warren Sanatorium, presented to the House Monday evening by Dr. Strickland and referred to the Judicial Council: The Principles of Ethics cover all such cases as that to which your communication refers, and we would respectfully direct your attention to Chapter II., Article 1, Sections 7 and 8 of the Principles of Ethics, by which you should be guided. It is the duty of county medical societies to eliminate all irregularities by proceeding in the regularly established proper manner. If any county society neglects to so do, it will be the duty of the respective District Censors to investigate the case, and if these officers do not do so, the matter should be referred to the Councilor of that district who shall report the fact in writing to the House of Delegates of this Society.

The Trustees reported regarding the resolution of the Berks County Society presented to the House of Delegates Wednesday morning and referred to the Council as follows: The Judicial Council being only a court of review, and as the proper papers were not presented with the resolution, it is impossible for the Judicial Council to consider the matter. The Trustees, however, remind our members that a county society is within bounds the sole judge of who shall or shall not become and remain a member of the society.

The Business Committee reported favorably on the resolution presented by Dr. Eaton, and the House authorized the appointment of a committee of five to confer with religious bodies with reference to the advertising of nostrums.

The Business Committee reported favorably concerning the resolution introduced by Dr. Schamberg regarding vaccination, and the House adopted the resolution as introduced.

On motion of Dr. Craig the thanks of the Society were extended to our efficient retiring officers, to the committees who have contributed to our welfare and comfort while here and to the arrangement of so excellent a program, to the Business Committee of the House, and particularly to the members of the Bedford County Medical Society, and to our host for the excellent time we have had.

On motion of Dr. A. R. Craig the House adjourned *sine die*, subject, however, to proper call for a special meeting.

William H. Hartzell, President.
Cyrus Lee Stevens, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES ANSWERING TO ROLL CALL.

Allegheny County Society—Ewing W. Day, president; Edward B. Heckel, James C. Burt, Laird O. Miller, Theodore J. Elterich, Adolph Koenig, William C. Wallace.

Armstrong County Society—Charles M. McLaughlin.

Beaver County Society—Jefferson H. Wilson.

Bedford County Society—Samuel G. Statler.

Berks County Society—Fremont W. Frankhauser.

Blair County Society—Charles Long.

Bucks County Society—John B. Carrell.

Butler County Society—Raymond H. Pillow.

Cambria County Society—John B. Woodruff, president; Frank B. Statler.

Chester County Society—Erasmus V. Swing.

Clearfield County Society—Hiram O. King, president.

Cumberland County Society—Americus R. Allen.

Dauphin County Society—John B. McAlister.

Delaware County Society— Franklin J. Evans.

Erie County Society—David H. Strickland.

Fayette County Society—Jacob S. Hackney.

Franklin County Society—David Maclay.

Huntingdon County Society—John C. Fleming, president; Andrew B. Brumbaugh.

Indiana County Society—John T. Cass.

Lackawanna County Society—Morgan J. Williams, Lowel M. Gates.

Lancaster County Society—Alexander R. Craig, Walter B. Weidler.

Luzerne County Society—Charles P. Stackhouse, Alexander G. Fell.

Mercer County Society—John H. Twitmyer.

Mifflin County Society—John R. Hunter, president.

Montgomery County Society—Philip Y. Eisenberg.

Montour County Society—William H. Krickbaum, president.

Philadelphia County Society—Charles K. Mills, president; John B. Roberts, Henry Beates, Jr., Franklin Brady, Charles W. Burr, Henry W. Cattell, Alfred Stengel, Albert M. Eaton, L. Jay Hammond, Wendell Reber, Jay F. Schamberg.

Schuylkill County Society—William T. Williams.

Susquehanna County Society—John G. Wilson.

Washington County Society—John B. Donaldson, Thomas G. Cashman.

Westmoreland County Society—Albert S. Kaufman.

York County Society—Alfred A. Long.

MEMBERS IN ATTENDANCE AT THE SESSION AT BEDFORD SPRINGS, SEPTEMBER 10, 11, 12, AND 13, 1906.

ALLEGHENY COUNTY SOCIETY.

Laird O. Miller, Allegheny; William C. Wallace, Ingram; Elizabeth L. Martin, Markleton; William F. Knox, S. L. Wiggins, McKeesport; William M. Beach, John W. Boyce, John G. Burke, Hamilton S. Burroughs, James C. Burt, Robert C. Clarke, Alvin S. Daggette, Thomas D. Davis, E. W. Day, Theodore Diller, G. Arthur Dillinger, Theodore J. Elterich, Charles Emmerling, William S. Foster, Otto C. Gaub, Edward B. Heckel, Richard G. Herron, Chevalier Jackson, George C. Johnston, James I. Johnston, Clement R. Jones, Ferdinand Koeller, Adolph Koenig, John A. Lichty, Lawrence Litchfield, Albert R. Matheny, Robert Milligan, William K. T. Sahm, Christopher C. Sandels, David Silver, Frank F. Simpson, Edward H. Small, Edward Stieren, Joseph E. Willetts, Pittsburg; H. W. Morrow, Swissvale; John E. Rigg, Wilkinsburg.

ARMSTRONG COUNTY SOCIETY.

Charles M. McLaughlin, Freeport; David I. Giarth, Kittanning.

BEAVER COUNTY SOCIETY.

William C. Meanor, Jefferson H. Wilson, Beaver; Theodore P. Simpson, Beaver Falls.

BEDFORD COUNTY SOCIETY.

S. Graham Statler, Alum Bank; John A. Clark, Americus Enfield, Walter F. Enfield, S. H. Gump, Bedford; J. G. Hanks, Breezewood; C. C. Dibert, Buffalo Mills; Benjamin Franklin Hunt, Clearville; William P. S. Henry, Walter de la M. Hill, Walter P. Trimbath, Everett; Frank S. Campbell, Uriah Franklin Rohm, Hopewell; James W. Lindsey, Imler; G. Walter Potter, Loysburg; William Minnick, McKees Rocks; Charles W. Gensimore, New Enterprise; William E. Nycum, Osterburg; A. H. Evans, Charles O. Miller, Saxton; Edmund L. Smith, Schellburg; D. W. Davis, Six Mile Run.

BERKS COUNTY SOCIETY.

Israel Cleaver, Fremont W. Frankhauser, Reading.

BLAIR COUNTY SOCIETY.

Roswell T. Eldon, John Fay, Joseph D. Findley, Davis A. Hogue, Charles Long, C. C. Miller, William S. Ross, Altoona; William M. Eldon, William N. Nason, Roaring Spring.

BRADFORD COUNTY SOCIETY.

Cyrus Lee Stevens, Athens.

BUCKS COUNTY SOCIETY.

John B. Carrell, Hatboro.

BUTLER COUNTY SOCIETY.

R. H. Pillow, Butler.

CAMBRIA COUNTY SOCIETY.

Harvey M. Griffith, Conemaugh; W. D. Haight, S. S. Kring, John B. Lowman, Louis Henry Mayer, Frank B. Statler, Henson Foster Tomb, G. W. Wagoner, J. B. Woodruff, Johnstown; Benjamin F. Shires, Patton.

CENTER COUNTY SOCIETY.

Wilson W. Feidt, Bellefonte.

CHESTER COUNTY SOCIETY.

David Phipps Rettew, S. Horace Scott, Erasmus V. Swing, Coatesville.

CLARION COUNTY SOCIETY.

J. A. Brown, New Kensington.

CLEARFIELD COUNTY SOCIETY.

Hiram O. King, Curwensville; Fernandez Todd, Houtzdale; Albert Milton Buzard, Kylertown; S. J. Miller, Madera.

CLINTON COUNTY SOCIETY.

Joseph M. Corson, Chatham Run; Richard Armstrong, Francis P. Ball, Lock Haven.

COLUMBIA COUNTY SOCIETY.

Charles F. Altmiller, Bloomsburg; Luther B. Kline, Catawissa.

CUMBERLAND COUNTY SOCIETY.

A. R. Allen, S. S. Bishop, Carlisle; Philip R. Koons, Mechanicsburg.

DAUPHIN COUNTY SOCIETY.

William Thomas Bishop, Percy E. Deckard, J. Wesley Ellenberger, David S. Funk, E. H. James, John B. McAlister, Hiram McGowan, C. A. Rahter, T. L. Willetts, Harrisburg; Henry W. George, Middletown.

DELAWARE COUNTY SOCIETY.

Franklin J. Evans, Daniel W. Jefferis, Chester.

ERIE COUNTY SOCIETY.

George S. Dickinson, Ira J. Dunn, David H. Strickland, Erie.

FAYETTE COUNTY SOCIETY.

Jacob S. Hackney, Uniontown; Wilkins W. Osborn, Upper Middletown.

FRANKLIN COUNTY SOCIETY.

H. C. Devilbliss, David Maclay, R. W. Ramsey, W. F. Skinner, Chambersburg.

HUNTINGDON COUNTY SOCIETY.

Andrew B. Brumbaugh, Howard C. Frontz, George G. Harman, David P. Miller, R. Myers, William H. Sears, Huntingdon; Lewis E. Wolfe, James Creek; W. M. Miller, McAlveys Fort; C. B. Bush, Orbisonia; Charles Campbell, Petersburg; John C. Fleming, Shirleysburg.

INDIANA COUNTY SOCIETY.

William E. Dodson, Indiana; William B. Ansley, Saltsburg; John T. Cass, West Lebanon.

LACKAWANNA COUNTY SOCIETY.

John J. Breneman, Lowell M. Gates, Daniel A. Webb, Morgan J. Williams, Scranton.

LANCASTER COUNTY SOCIETY.

Alexander R. Craig, Thomas M. Livingston, Columbia; Theodore B. Appel, Walter Baer Weidler, John W. Kinard, Lancaster.

LEHIGH COUNTY SOCIETY.

F. A. Fetherolf, W. H. Hartzell, H. H. Herbst, Allentown.

LUZERNE COUNTY SOCIETY.

Frederic Corss, Kingston; Henry M. Neale, Upper Lehigh; Ernest U. Buckman, Alexander G. Fell, George W. Guthrie, John F. Shaw, Charles P. Stackhouse, Wilkes-Barre.

LYCOMING COUNTY SOCIETY.

George D. Nutt, Williamsport.

MERCER COUNTY SOCIETY.

John H. Twitmyer, Sharpsville.

MIFFLIN COUNTY SOCIETY.

Alexander S. Harshberger, John R. W. Hunter, Lewistown.

MONTGOMERY COUNTY SOCIETY.

Samuel G. Dixon, Ardmore; William McKenzie, Conshohocken; P. Y. Eisenberg, Howard F. Pyfer, Norristown.

MONTOUR COUNTY SOCIETY.

William H. Krickbaum, Danville.

NORTHAMPTON COUNTY SOCIETY.

Edgar M. Green, Easton; William L. Estes, South Bethlehem.

PERRY COUNTY SOCIETY.

Winfred J. Wright, Duncannon; W. Homer Hoopes, Newport.

PHILADELPHIA COUNTY SOCIETY.

Guy Hinsdale, Hot Springs, Virginia; Henry D. Beyea, Henry Beates, Jr., William N. Bradley, Franklin Brady, Charles W. Burr, Henry W. Cattell, Myer Solis-Cohen, Judson Daland, Albert M. Eaton, Seneca Egbert, John M. Fisher, L. Webster Fox, Charles H. Frazier, John H. Gibbon, John J. Gilbride, R. Max

Goepp, Alfred Gordon, L. J. Hammond, Howard Forde Hansell, William G. B. Harland, Howard K. Hill, John H. Jopson, Henry D. Jump, Henry R. M. Landis, Ernest Laplace, Robert G. LeConte, Sarah H. Lockrey, Warfield T. Longcope, Christian B. Longenecker, G. Hudson-Makuen, Edward Martin, James Herbert McKee, Charles K. Mills, E. E. Montgomery, George P. Müller, William S. Newcomet, S. W. Newmayer, George E. Pfahler, Wendell Reber, Horace K. Regar, Samuel D. Risley, John B. Roberts, William L. Rodman, B. Franklin Royer, Jay Frank Schamberg, J. Thompson Schell, George Erety Shoemaker, Edward A. Shumway, Harry A. Shute, Allen J. Smith, William G. Spiller, William B. Stanton, Alfred Stengel, J. G. Taylor, Thomas Turner Thomas, Theodore Weisenburg, William M. Welch, Henry R. Wharton, H. Augustus Wilson, Samuel Wolfe, Philadelphia.

SCHUYLKILL COUNTY SOCIETY.

David Taggart, Frackville; W. T. Williams, Mt. Carmel; G. O. O. Santee, Schuylkill Haven.

SOMERSET COUNTY SOCIETY.

Ross J. Hemminger, Meyersdale.

SUSQUEHANNA COUNTY SOCIETY.

John G. Wilson, Montrose.

VENANGO COUNTY SOCIETY.

John C. O'Day, Oil City.

WARREN COUNTY SOCIETY.

Charles C. Kemble, Tidioute.

WASHINGTON COUNTY SOCIETY.

John B. Donaldson, Canonsburg; W. D. Martin, Sparta; Leroy W. Braden, Ten Mile; Thomas Francis Cashman, Robert S. Stewart, Washington.

WESTMORELAND COUNTY SOCIETY.

Albert S. Kaufman, David M. Koontz, New Kensington; O. C. Engle, James P. Strickler, Scottdale.

YORK COUNTY SOCIETY.

Martin L. Barshinger, Isaac C. Gable, A. A. Long, Charles Rea, York.

INVITED GUEST.

John E. Weeks, New York City.

VISITORS.

William Henry De Courcey, Carmichael, Maryland; Emmett L. Jones, James M. Spear, Cumberland, Maryland; Percival Lantz, Alaska, West Virginia; Cyrus H. Maxwell, Morgantown, West Virginia.

DELEGATES FROM STATE SOCIETIES.

THE MEDICAL SOCIETY OF NEW JERSEY.

William Edgar Darnall, Atlantic City; H. H. Sherk, Camden.

MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND.

W. Preston Miller, Hagerstown.

MINUTES OF THE GENERAL MEETING.

TUESDAY AFTERNOON, SEPTEMBER 11, 1906.

The General Meeting of the Fifty-sixth Annual session of the Medical Society of the State of Pennsylvania was convened in Room No. 1 of Bedford Springs Hotel, Bedford Springs, Tuesday, September 11, 1906, and was called to order by the President, Dr. William H. Hartzell, Allentown, at 10 A. M. There were also present the following officers: Drs. Morgan J. Williams, Scranton; Israel Cleaver, Reading; and George G. Harman, Huntingdon, First, Third and Fourth Vice-Presidents; Dr., Cyrus Lee Stevens, Athens, Secretary; Dr. Theodore B. Appel, Lancaster, Assistant Secretary; Dr. George W. Wagoner, Johnstown, Treasurer; and the following Trustees: Drs. Thomas D. Davis, Pittsburg; Henry Beates, Jr., Philadelphia; Richard Armstrong, Lock Haven; Isaac C. Gable, York; George W. Guthrie, Wilkes-Barre; George D. Nutt, Williamsport; William S. Ross, Altoona; Thomas M. Livingston, Columbia.

PRAYER BY REV. M. L. CULLER, D. D., PASTOR OF TRINITY LUTHERAN CHURCH, BEDFORD.

Almighty God, the Creator of all things, the heavens above, the earth beneath; Thou hast made all things in the heavens, and rulest over them all; Thou has made all things that are in the earth, all life, animate and inanimate, —the beasts of the fields, the fowls of the air, all that has life, every tree, and every plant, and every flower, and every herb for the food of man, or for healing remedies for humanity. Thou hast made the world and all that in it is. Lord, Tho hast made us. We are the creatures of Thy hand. Thou Lord, art our Father's God, we praise Thee, our God, and we adore Thee, our Father, and we love Thee and honor Thee. As our Father, Thou art deeply concerned in all the interests of man; in all that he engages in; in all his avocations; in all his labors; all his professions, and especially in all these things which concern the welfare of man and the glory of Thy blessed name. Now Lord, we ask Thee to look with favor upon these, Thy servants, who are convened as a medical society, and bless them in coming together, in their deliberations, and their discussions. Oh, give unto them that wisdom which Thou hast promised to all who ask Thee, in the work in which they are engaged, the relief of suffering and the alleviation of distress. Oh, Thou blessed Lord and Master, Jesus Christ, our Saviour, when Thou wast on earth, Thou didst go about doing good; Thou didst heal all manner of diseases and sicknesses, as well as deliver us from the power of sin and death. And now, bless these, Thy servants, who are engaged in a work akin to that work in which Thou wast engaged while on earth. Do thou bless them, we pray Thee, and help them to feel more and more even the greatness of that benevolent work in which they are engaged. And we pray Thee to give them wisdom and greater understanding, that they may find out more and more the remedies which Thou placed in Nature for the relief of man. Do Thou, Oh Lord, give them larger power over disease and larger success in the alleviation of suffering. We pray Thee that Thou wilt bless this association, convened here together, of this great Commonwealth, and the medical profession throughout this land, and throughout the world, Oh, Thou gracious God. We pray Thee that Thou wilt bless also every true scientific investigation, all seeking after useful knowledge, all true art, all those things which concern the alleviation of suffering and the civilization of mankind. We pray Thee then Lord that Thou wilt bless all Thy servants, in whatever calling or work they may be engaged; continue Thy blessing upon Thy servants as they spend some time here, engaged in their work. Bless everyone of us wherever we are, and in whatever work engaged, so that when we have finished our work all may come to the blessed inheritance where they shall never say "I am sick"; or "I am faint"; where there is no pain, no distress or suffering, "for the former things have passed away." These, and all things, which we need now and always, we ask in the name and for the sake of our Blessed Lord, Amen.

Dr. William Henry DeCoursey of the New Jersey State Medical Society was introduced to the Society and invited to participate in the discussions of the meeting. He thanked the Society for the courtesy, which was briefly responded to by the President.

At the request of the Committee on Scientific Work, Dr. Theodore Diller's paper on "A Plea for the Creation of a State Hospital for Inebriates and Drug Habitués" was advanced to a position on the program immediately following the President's Address.

PRESENTATION OF PROGRAM.

DR. SIMON H. GUMP, BEDFORD, CHAIRMAN OF COMMITTEE ON ARRANGEMENTS:

Mr. President and Members: It gives me great pleasure to present to you the official program for the session at Bedford Springs. It contains ninety-two papers; of which, six compose a symposium on the thyroid gland, thirty-eight are on medicine, thirty-three on surgery, and fifteen on eye, ear, nose and throat diseases. It should give us all especial pleasure to greet the doctors who show such untiring zeal. How proud we should feel and how glad we should be that we belong to such an organization of wide-awake thinkers and workers. I thank you for your courtesy and hope you will all have a very pleasant time. I present this program as the order of business for the session.

On motion, the program was adopted as printed.

ADDRESS OF WELCOME BY DR. WILLIAM P. S. HENRY, PRESIDENT OF THE BEDFORD COUNTY MEDICAL SOCIETY.

Mr. President and Members of the Medical Society of the State of Pennsylvania:

Surveying the marvelous progress of the art and sciences made in recent years, it is gratifying to note that medicine and surgery are maintaining a position in the front rank. Your Society is doing a good work to this end, and the present meeting promises to be an exceptionally interesting one.

Such an opportunity for wholesale profit as this session will afford the members of Bedford County Medical Society does not often appear at the very door of the country physician, and we are duly appreciative. Representing the Bedford County Medical Society, therefore, it affords me the keenest pleasure to welcome you to Bedford County to pursue the deliberations of this, the annual meeting for the year 1906, about to begin.

Bedford is one of the oldest and most interesting counties in the state from an historic standpoint; and this rendezvous, the famous old Bedford Springs, it is to be hoped will be found satisfactory and comfortable. It would seem at least a most appropriate place for the gathering of a deliberative medical body in view of the well and favorably known health-giving properties of its waters, and its picturesque and inspiring surroundings.

It is not my purpose to inflict upon you an extended address, but I wish to say that the idea of this great Society of the grandest old state of the Union resolving itself practically into an immense house party seems unique, but certain of accomplishment with all the attendant *camaraderie* of such affairs, if we see fit to utilize favoring conditions. It is to be hoped, therefore, that all may enter into the spirit of the scheme so heartily as to make this meeting throughout such a "feast of reason and flow of soul" as will not readily be forgotten. During the major portion of the daytime hours, instead of ranging over nearby field and forest in search of pastime sports, after the manner of the traditional house party, you, by virtue of the high standard of your code of life, may find equal pleasure in the rounding up of scientific problems for the benefit of the great human family.

Desirous that all may be may happily situated, we, the members of the Bedford County Medical Society, will be at your service to render aid in any way possible to that end. Allow me again to extend you a most cordial welcome and greeting.

On motion of Dr. Theodore B. Appel, Lancaster, the thanks of the Society were tendered to the Bedford County Medical Society for its courtesy, and a copy of the Address of Welcome of the President was requested for publication in the JOURNAL.

The President's Address was delivered by Dr. William H. Hartzell, Allentown (see page 3).

On motion of Dr. C. L. Stevens, Athens, the thanks of the Society were extended to the President for his Address and a copy of the same requested for publication in the JOURNAL.

"A Plea for the Creation of a State Hospital for Inebriates and Drug Habitués" was read by Dr. Theodore Diller, Pittsburg, and discussed by Drs. John B. Carrell, Hatboro; Lowell M. Gates, Scranton; Charles K. Mills and Charles W. Burr, Philadelphia; Fremont W. Frankhauser, Reading; Henry Beates, Jr., and John B. Roberts, Philadelphia; and closed by Dr. Diller, who read suitable resolutions, which, on motion of Dr. William M. Welch, Philadelphia, were referred to the House of Delegates (see minutes of House of Delegates for Wednesday).

WEDNESDAY AFTERNOON, SEPTEMBER 12, 1906.

The meeting was called to order at 2 P. M. by the President, Dr. William H. Hartzell, Allentown.

"The Thyroids and Parathyroids; Their Relations, Histology, Physiology, and Chemistry" was read by Dr. Allen J. Smith, Philadelphia.

"The Pathology of Diseases of the Thyroid Gland" was read by Dr. George P. Müller, Philadelphia.

"Classification of the Diseases of the Thyroid Gland and Their Etiology, with Special Consideration of Cretinism and Myxedema; Therapeutic Uses and Abuses of the Thyroid Gland" was read by Dr. Theodore J. Elterich, Allegheny.

"Symptomatology, Diagnosis, and Medical Treatment of Exophthalmic Goiter" was read by Dr. Alfred Stengel, Philadelphia.

"Surgery of the Thyroid Gland" was read by Dr. Robert G. LeConte, Philadelphia.

"The Relation between the Thyroid and the Eye" was read by Dr. John E. Weeks, New York City.

The preceding six papers, composing the symposium on the Thyroid Gland were discussed by Drs. Edward Martin and Samuel D. Risley, Philadelphia; and James I. Johnston, Pittsburg.

On motion of Dr. Samuel D. Risley, Philadelphia, duly seconded and carried, a vote of thanks was tendered Dr. Weeks, who had carefully prepared his paper and come from New York to present it before the Society.

The Assistant Secretary announced the registration of Drs. William Edgar Darnall and H. H. Sherk as Delegates from the Medical Society of New Jersey, Dr. W. Preston Miller from the Medical and Chirurgical Faculty of Maryland, and Dr. C. H. Maxwell, a Delegate from the Medical Society of West Virginia.

The Assistant Secretary announced the presence of a number of members of the Medical Society of Maryland, not as delegates, and requested that they be allowed to register and that the privileges of the Society be extended to them. On motion it was seconded and carried.

The retiring President, Dr. Hartzell, announced the appointment of committees, section officers and orators for the coming year. For list of same see pages 1 and 2.

The President, Dr. Hartzell, then appointed Drs. Israel Cleaver, Reading, and Philip Y. Eisenberg, Norristown, a committee, to conduct the President elect to the chair.

THE RETIRING PRESIDENT:

Members of the Medical Society of the State of Pennsylvania: At our annual sessions it is the custom to introduce a newly elected president. This I would blush to do, as this man is so well known to you all. Usually it is the Society that does honor to the man, but to-day it is the man who honors the Society, and I shall merely present him to you.

THE PRESIDENT ELECT:

Members of the State Medical Society, Ladies and Gentlemen: I desire simply to return my sincere thanks for the distinguished honor you have conferred upon me in electing me President of this large and influential body. The Medical Society of the State of Pennsylvania, with its forty-six hundred members, is one of the largest and most influential medical societies in this country. When I remember that my predecessors in this office have been men of distinguished celebrity, men who were most eminent in the profession, I feel that in the selection of myself for the presidency of this Society you have placed upon me a great responsibility. I shall, however, in the discharge of my duties, endeavor to preside over this body to the best of my ability, trusting that the members of the Society will assist me in every endeavor to accomplish the greatest success attainable. Mr. President, I hope that we may have, at the meeting at Reading, next September, as pleasant and successful a gathering as we have at present in session at Bedford Springs.

The minutes of Tuesday morning and of this meeting were then read by Dr. Appel, and on motion approved. Society in General Session then adjourned.

WM. H. HARTZELL, President.

CYRUS LEE STEVENS, Secretary.

MINUTES OF THE MEDICAL SECTION.

TUESDAY AFTERNOON, SEPTEMBER 11, 1906.

The Medical Section was called to order at 2:20 P. M. by the Chairman, Dr. Lawrence Litchfield. Dr. E. W. Day was appointed Secretary *pro tem.*

The Oration on Medicine was delivered by Dr. Daniel W. Jefferis, Chester. On motion of Dr. W. S. Foster, Pittsburg, a standing vote of thanks was given Dr. Jefferis for his interesting address.

Dr. John B. Roberts, Philadelphia, read a paper entitled "Some Causes of Inefficiency in Medical Practice." Dr. Adolph Koenig, Pittsburg, read a paper entitled "A Discussion of Some of the New Features of the United States Pharmacopeia of 1900." The papers were discussed by Drs. R. Max Goepp and Judson Daland, Philadelphia; John W. Boyce, Pittsburg; Erasmus V. Swing, Coatesville; John E. Rigg, Wilkinsburg; Seneca Egbert and Wendell Reber, Philadelphia, and closed by Drs. Roberts, Koenig, and a few words from Dr. Jefferis.

A paper by Dr. John V. Shoemaker, Philadelphia, on "Electricity in the Treatment of Disease" was read by Dr. George E. Pfahler, Philadelphia.

Dr. Martin L. Barshinger, York, read a paper on "The High Frequency Current in Pulmonary Tuberculosis." Dr. George E. Pfahler, Philadelphia, followed with a paper entitled "The High Frequency Currents in Chronic Rheumatism and Rheumatoid Arthritis." The papers were discussed by Drs. Jay F. Schamberg, Philadelphia; A. Ralston Matheny and Lawrence Litchfield, Pittsburg; Christian C. Miller, Altoona; Charles K. Mills, Judson Daland, and Seneca Egbert, Philadelphia, and closed by Dr. Pfahler.

Dr. John W. Boyce, Pittsburg presented a paper entitled "The Diagnosis of Brain Abscess as a Department of General Medicine." The paper was discussed by Drs. William G. Spiller and Charles K. Mills, Philadelphia, and closed by Dr. Boyce.

Dr. B. Franklin Royer, Philadelphia, read a paper on "An Analysis of the Kidney Condition of Eight Hundred Cases of Scarlet Fever Treated by Routine Doses of Chloral Hydrate." This paper was discussed by Dr. John E. Rigg, Wilkinsburg, and closed by Dr. Royer.

WEDNESDAY MORNING, SEPTEMBER 12, 1906.

The Section was called to order at 10 A. M. by the Chairman, Dr. Lawrence Litchfield, Pittsburg.

Dr. John G. Wilson, Montrose, presented a paper entitled "Report of a Case of Pernicious Anemia with Jaundice." The paper was discussed by Dr. Judson Daland, Philadelphia, and closed by Dr. Wilson.

Dr. Solomon W. Newmayer, Philadelphia, read a paper entitled "The Trained Nurse in the Public Schools as a Factor in the Education of the Children." The paper was discussed by Drs. Herbert H. Herbst, Allentown; Seneca Egbert, Philadelphia; Thomas D. Davis. Pittsburg; Myer Solis-Cohen and Jay F. Schamberg, Philadelphia; Daniel W. Jefferis, Chester; James H. McKee, Philadelphia; Frank J. Evans, Chester, and closed by Dr. Newmayer.

Dr. John W. Ellenberger, Harrisburg, read a paper on "Smallpox" (illustrated with lantern slides). The paper was discussed by Drs. William M. Welch, and Seneca Egbert, Philadelphia; James I. Johnston, Pittsburg; B. Franklin Royer and Jay F. Schamberg, Philadelphia, and closed by Dr. Ellenberger.

Dr. William M. Welch offered the following resolution: That the Medical Society of the State of Pennsylvania in session at Bedford Springs, September, 1906, reaffirms its confidence in the prophylactic power of vaccination against smallpox and urges upon the Committee on Public Policy and Legislation to resist any efforts that may be made to weaken the present vaccination law of the state.

On motion the resolution was referred to the House of Delegates.

Dr. Myer Solis-Cohen, Philadelphia, read a paper entitled "Latent Diphtheria a Public Health Problem." The paper was discussed by Drs. B. Franklin Royer, Philadelphia; Herbert H. Herbst, Allentown; John E. Rigg, Wilkinsburg; Solomon W. Newmayer, Henry W. Cattell, William M. Welch, and William G. B. Harland, Philadelphia, and closed by Dr. Cohen.

Dr. A. B. Brumbaugh, Huntingdon, read a paper entitled "Quarantine."

Adjourned to 9 A. M. Thursday.

THURSDAY MORNING, SEPTEMBER 13, 1906.

The Section was called to order at 10 A. M. by the Chairman, Dr. Litchfield.

The Oration on Medicine was delivered by Dr. Samuel G. Dixon, Commissioner of Health of Pennsylvania.

Dr. Jay F. Schamberg, Philadelphia, offered the following:—

"I move you, sir, that a rising vote of thanks be tendered Dr. Dixon for his admirable address, and, furthermore, that this body express to him its gratitude for the zealous, self-sacrificing and efficient manner in which he has discharged the important and onerous duties of Commissioner of Health." Carried.

Dr. George Erety Shoemaker, Philadelphia, moved that a committee be appointed to draw up appropriate resolutions in regard to the midwifery evil. The motion was seconded and the Chair appointed the following committee to report at the afternoon session:—Drs. W. S. Foster, Pittsburg; George Erety Shoemaker, and J. Thompson Schell, Philadelphia.

A Symposium on Gastro-intestinal Disease was read as follows:

"Etiology and Symptomatology of Stenosis of the Pylorus," by Dr. George S. Dickinson, Erie.

"The Differential Diagnosis and Treatment of Pyloric Stenosis," by Dr. John A. Lichty, Pittsburg.

"Hyperchlorhydria and Its Treatment," by Drs. Henry D. Jump and Howard Kennedy Hill, Philadelphia.

"Gastroptosis, with Special Reference to Its Treatment," by Dr. John J. Gilbride, Philadelphia.

"Clinical Results from Examination of Feces after Intestinal Test Meal," by Dr. Clement R. Jones, Pittsburg.

The papers in the symposium were discussed by Drs. Howard Kennedy Hill, H. D. Beyea, and Samuel Wolfe, Philadelphia; Rudolph Myers, Huntingdon, and closed by Drs. Dickinson, Lichty, Jump, Gilbride, and Jones.

Dr. Rudolph Myers, Huntingdon, read a paper on "A Peculiar Trophic Affection of the Skin in a Neurotic Subject." This paper was discussed by Drs. Alfred Gordon, Philadelphia, John G. Burke, Pittsburg, and closed by Dr. Myers.

Dr. Alfred Gordon, Philadelphia, presented a paper entitled "The Salt-Free Treatment of Epilepsy apropos of Thirty-seven Cases." The paper was discussed by Dr. Guy Hinsdale, Hot Springs, Va. and closed by Dr. Gordon.

The following papers were read by title:—

"Heredity from the Standpoint of the Physician," by Dr. Frederick A. Rhodes, Pittsburg.

"Physiological Chemistry," by Dr. William J. K. Kline, Greensburg.

"The Interrelationship of the Heart and Stomach during the Phases of Respiration," by Dr. Richard J. Behan, Pittsburg.

"Treatment of the Newborn Child and the Parturient Woman," by Dr. J. Thompson Schell, Philadelphia.

Adjourned to 2 P. M.

THURSDAY AFTERNOON, SEPTEMBER 13, 1906.

The Section was called to order at about 2:30 P. M. with the Chairman, Dr. Lawrence Litchfield, in the chair.

The Committee on Midwifery reported the following resolution, which on motion was adopted and referred to the Committee on Legislation because of the adjournment of the House of Delegates, to which body it otherwise would have gone:—

Whereas, There is a reported large mortality following childbirth, which is due to preventable infection and other accidents of labor, and,

Whereas, The state has increased the public safeguards by requiring an examination of physicians before allowing them to practice midwifery, be it

Resolved, That a committee of nine (9) be appointed by the President of the State Medical Society, to formulate an act to be introduced before the Legislature of the State of Pennsylvania, establishing a legal standard of education for midwives, which may be as far as possible in harmony with the best standards in force in other states.

W. S. FOSTER, Chairman.
GEORGE ERETY SHOEMAKER.
J. THOMPSON SCHELL.

On motion the following joint resolution was adopted:

CONCURRENT RESOLUTION OF THE THREE SECTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA IN SESSION AT BEDFORD, SEPTEMBER 10-13, 1906.

Whereas, The Oration on State Medicine officially disclosed the appalling fact that, within one year, approximately two thirds of the population of the Commonwealth of Pennsylvania was without protection against the spread of communicable diseases, and that thereby health and life were seriously jeopardized and needlessly sacrificed, and

Whereas, It was conclusively demonstrated that deplorable ignorance prevailed as to the importance, practicability and efficiency of correcting these evils, therefore be it

Resolved, That the oganization of the Department of Health as reported, its methods of procedure in educating the public and in enforcing the existing laws, be heartily endorsed; and that an expression of appreciation be given of the excellent results already achieved; and the unanimous coöperation of this body be vouchsafed.

Dr. James I. Johnston, Pittsburg, read a paper entitled "Symptomatology and Diagnosis of Lobar Pneumonia."

Dr. Philip Y. Eisenberg, Norristown, presented a paper on "Certain Complications of Lobar Pneumonia, Considered with Reference to Surgical Interference."

A paper by Dr. James M. Anders, Philadelphia, on "The Treatment of Lobar Pneumonia" was read by the Secretary, Dr. James H. McKee.

Dr. Jay F. Schamberg, Philadelphia, read a paper entitled "Diagnostic Significance of Herpes Simplex in Infectious Diseases." The paper was discussed by Dr. James H. McKee, Philadelphia, and closed by Dr. Schamberg.

Dr. William B. Stanton, Philadelphia, read a paper entitled "The Relation of the Cardiac Muscle and Valves to Arterial Tension." This was discussed by Drs. John A. Lichty, Pittsburg, Guy Hinsdale, Hot Springs, Va., and closed by Dr. Stanton.

Dr. Guy Hinsdale of Hot Springs, Va., read a paper on "Principles of Climatology and Climatotherapy."

Dr. Henry R. M. Landis, Philadelphia, presented a paper on "Hypertrophic Pulmonary Osteoarthropathy with a Report of Two Cases."

Dr. William S. Newcomet, Philadelphia, read a paper on "The Relation of the Lymph Glands in the Mediastinum to Disease, and Their Value in Early Diagnosis." The paper was discussed by Dr. Lawrence Litchfield, Pittsburg, and closed by Dr. Newcomet.

Dr. Myer Solis-Cohen, Philadelphia, moved that a vote of thanks be extended to the officers of the Section for their very efficient efforts in behalf of the Section on Medicine. Seconded and carried.

Final adjournment.

LAWRENCE LITCHFIELD, Chairman.
JAMES H. MCKEE, Secretary.

MINUTES OF THE SURGICAL SECTION.

TUESDAY AFTERNOON, SEPTEMBER 11, 1906.

The Surgical Section was called to order at 2:30 P. M. by the Chairman, Dr. William L. Estes, South Bethlehem. The Secretary of the Section, Dr. John H. Jopson, Philadelphia, and the Stenographer, Mr. C. W. Van Artsdalen, Philadelphia, were in their respective places.

On motion of Dr. George W. Guthrie, Wilkes-Barre, the hour for future afternoon meetings was fixed for half past two o'clock.

The Chairman, Dr. Estes, then delivered his opening address, "The Prevention and Cure of Syphilis and Carcinoma."

The Oration on Neurology, "Advances in Surgery of the Nervous System Considered from the Standpoint of the Neurologist," was read by Dr. Theodore H. Weisenburg, Philadelphia.

"Late Cerebellar Abscesses of Traumatic Origin" was read by Dr. Daniel A. Webb, Scranton.

"Fracture of the Base of the Skull Resulting from Direct Violence Through the Inferior Maxilla" was read by Dr. Alexander G. Fell, Wilkes-Barre.

"The Present Status of Cranial Surgery" was read by Dr. Charles H. Frazier, Philadelphia.

"Brain Complications Following Mastoiditis" was read by Dr. Fremont W. Frankhauser, Reading.

"An Unusual Case of Trauma of the Head, Exhibiting Symptoms of Astereognosis as the Only Localizing Symptoms—Operation," by Drs. John H. W. Rhein and Edward Martin, Philadelphia, was read by Dr. Martin.

"Retarded Cerebral Development Due to Other Than Cerebral Causes" was read by Dr. Ernest Laplace, Philadelphia.

The preceding six papers, composing the symposium on Surgery of the Head and Spine, were discussed by Drs. Charles K. Mills, Charles W. Burr, William G. Spiller, L. Jay Hammond and William L. Rodman, Philadelphia; George W. Guthrie, Wilkes-Barre, and closed by Drs. Webb, Fell, Frazier, Frankhauser and Laplace.

"Photographic Illustrations in Modern Medical and Surgical Literature" was read by Dr. Christian B. Longenecker, Philadelphia.

The Chairman then declared the Section adjourned until 9 A. M., Wednesday, September 12, 1906.

WEDNESDAY MORNING, SEPTEMBER 12, 1906.

The meeting was called to order at 9:30 A. M. by the Chairman, Dr. William L. Estes, South Bethlehem.

The Oration on Gynecology was delivered by Dr. Frank F. Simpson, Pittsburg.

"The Surgical Treatment of Chronic Colitis" was read by Dr. William M. Beach, Pittsburg, and discussed by Drs. George Erety Shoemaker and John M. Fisher, Philadelphia; J. C. O'Day, Oil City; Otto C. Gaub, Pittsburg, and closed by Dr. Beach.

"A Modification in the Technic of Fixation of the Movable Kidney" was read by Dr. George Erety Shoemaker, Philadelphia, and discussed by Drs. J. C. O'Day, Oil City; Frank F. Simpson, Pittsburg; John J. Gilbride, Philadelphia, and closed by Dr. Shoemaker.

"Perineal Prostatectomy, Its Accidents and Complications" was read by Dr. L. Jay Hammond, Philadelphia, and discussed by Drs. William L. Rodman and John B. Roberts, Philadelphia, and closed by Dr. Hammond.

"The Value and Safety of Surgical Exploration in the Abdominal Complications of Typhoid Fever" was read by Dr. John B. Roberts, Philadelphia, and discussed by Drs. Edward H. Small, Pittsburg; William L. Rodman, Philadelphia; George W. Guthrie, Wilkes-Barre; John H. Jopson and L. Jay Hammond, Philadelphia, and closed by Dr. Roberts.

"The Use of Silk in Tenoplasty, an Experimental Study" was read by Dr. George P. Müller, Philadelphia.

"The Causes of Failure in Tendon Grafting" was read by Dr. David Silver, Pittsburg.

The preceding two papers were discussed by Dr. Silver.

"Fractures of the Head of the Radius with Exhibition of X-Ray Photographs from the Collection of Dr. H. K. Pancoast" was read by Dr. T. Turner Thomas, Philadelphia, and discussed by Dr. William L. Estes, South Bethlehem, and closed by Dr. Thomas.

"Cleft Palate" was read by Dr. Henry R. Wharton, Philadelphia, and discussed by Drs. John H. Gibbon, John B. Roberts, G. Hudson Makuen and T. Turner Thomas, Philadelphia, and closed by Dr. Wharton.

The Chairman then declared the Section adjourned until 9:30 A. M., Thursday, September 13, 1906.

THURSDAY MORNING, SEPTEMBER 13, 1906.

The Section was called to order at 9:30 A. M. by the Chairman, Dr. William L. Estes, South Bethlehem.

The Oration on Surgery was delivered by Dr. Otto C. Gaub, Pittsburg.

"Injuries of the Thoracic Cavity" was read by Dr. George W. Wagoner, Johnstown.

"Foreign Bodies in the Larynx with Report of a Case" by Dr. Frank Alleman, Lancaster, was read by the Secretary of the Section.

"Abscess of the Lung" was read by Dr. William L. Rodman, Philadelphia.

"Empyema" in Children" was read by Dr. John H. Jopson, Philadelphia.

"The Treatment of Pleural Effusions" was read by Dr. Edward Martin, Philadelphia.

"Surgery of the Thoracic Cavity" was read by Dr. J. C. O'Day, Oil City.

The preceding six papers, composing the symposium on Surgery of the Thorax, were discussed by Drs. John B. Roberts and John H. Gibbon, Philadelphia; Israel Cleaver, Reading; Theodore B. Appel, Lancaster; Ernest Laplace, Philadelphia; George W. Guthrie, Wilkes-Barre; P. Y. Eisenberg, Norristown; Lowell M. Gates, Scranton; Americus Enfield, Bedford; and closed by Drs. Jopson, Martin, O'Day and Rodman.

"The Röntgen Treatment of Tubercular Glands" was read by Dr. George C. Johnston, Pittsburg.

"Surgical Tuberculosis" was read by Dr. George W. Guthrie, Wilkes-Barre.

"The Significance of the So-called Acute Stage of Bone Tuberculosis" was read by Dr. H. Augustus Wilson, Philadelphia.

These preceding three papers were discussed by Drs. John H. Gibbon and Ernest Laplace, Philadelphia; William L. Estes, South Bethlehem; Israel Cleaver, Reading, and closed by Drs. Johnston, Guthrie and Wilson.

On motion of Dr. William L. Rodman, Philadelphia, the thanks of the members of the Surgical Section were extended to its officers and stenographer for a most successful meeting largely due to their efforts.

On motion the following joint resolution was adopted:

CONCURRENT RESOLUTION OF THE THREE SECTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA IN SESSION AT BEDFORD, SEPTEMBER 10-13, 1906.

Whereas, The Oration on State Medicine officially disclosed the appalling fact that, within one year, approximately two thirds of the population of the Commonwealth of Pennsylvania was without protection against the spread of communicable diseases, and that thereby health and life were seriously jeopardized and needlessly sacrificed, and

Whereas, It was conclusively demonstrated that deplorable ignorance prevailed as to the importance, practicability and efficiency of correcting these evils, therefore be it

Resolved, That the organization of the Department of Health as reported, its methods of procedure in educating the public and in enforcing the existing laws, be heartily endorsed; and that an expression of appreciation be given of the excellent results already achieved; and the unanimous coöperation of this body be vouchsafed.

Upon motion the Section adjourned.

William L. Estes, Chairman.
John H. Jopson, Secretary.

MINUTES OF THE SECTION ON SPECIALTIES.

WEDNESDAY MORNING, SEPTEMBER 12, 1906.

The Section on Specialties was called to order at 10 A. M., by the Chairman, Dr. Samuel D. Risley, Philadelphia.

Following the Chairman's Address papers composing a symposium on Ocular Infections were read as follows:

"Local Infection from the Conjunctiva and the Lachrymal Passages," by Dr. Edward A. Shumway, Philadelphia.

"Operative and Postoperative Infections," by Dr. Glendon E. Curry, Pittsburg, was read by the Secretary of the Section, Dr. Robert Milligan, Pittsburg.

"Treatment of Ulcer of the Cornea," by Dr. Edward Stieren, Pittsburg.

"Endogenous Infections," by Dr. Howard F. Hansell, Philadelphia.

The four papers were discussed by Drs. Wendell Reber and Samuel D. Risley, Philadelphia; Howard F. Pyfer, Norristown; John E. Weeks, New York, and closed by Drs. Shumway, Hansell and Stieren.

Owing to the absence of a member who was to read a paper, some papers on the program for Thursday were read by general consent.

"A New Procedure For Treating a Prolapse of the Iris Complicating Perforating Wounds of the Cornea" was read by Dr. Edward B. Heckel, Pittsburg, and discussed by Drs. L. Webster Fox and Samuel D. Risley, Philadelphia. Dr. Heckel in closing the discussion answered several questions that had been asked by the members present.

"Retinal Asthenopia" was read by Dr. Joseph E. Willetts, Pittsburg.

"What is the Safest Operation for Cataract?" was read by Dr. Wendell Reber, Philadelphia. The discussion on the paper of Dr. Reber was opened by Dr. John E. Weeks, New York, continued by Drs. Fox, Weeks, Hansell, Stieren, Willetts and Risley, and closed by Dr. Reber.

Section then adjourned for the day.

THURSDAY MORNING, SEPTEMBER 13, 1906.

The Section was called to order at 9 A. M. by the Chairman, Dr. Samuel D. Risley, Philadelphia.

"The Oration in Laryngology was read by Dr. Ira J. Dunn, Erie.

"The Value of Skiagraphy in the Surgery of the Nose" by Drs. William G. B. Harland and Henry K. Pancoast, Philadelphia, was read by Dr. Harland and discussed by Drs. Howard F. Pyfer, Norristown; G. Hudson-Makuen and Samuel D. Risley, Philadelphia, and Chevalier Jackson, Pittsburg, and closed by Dr. Harland.

"Intranasal Conditions as Bearing upon the Etiology of Diseases of the Ear" was read by Dr. G. Hudson-Makuen, Philadelphia, and discussed by Drs. Chevalier Jackson, Pittsburg; Howard F. Pyfer, Norristown; Fremont W. Frankhauser, Reading, and Samuel D. Risley, Philadelphia, and closed by Dr. Makuen.

"Splitting the Larynx for the Removal of Growths" was read by Dr. Chevalier Jackson, Pittsburg, and discussed by Drs. Robert Milligan, Pittsburg; William G. B. Harland, Samuel D. Risley and G. Hudson-Makuen, Philadelphia, and closed by Dr. Jackson.

On motion the following joint resolution was adopted:

CONCURRENT RESOLUTION OF THE THREE SECTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA IN SESSION AT BEDFORD, SEPTEMBER 10-13, 1906.

Whereas, The Oration on State Medicine officially disclosed the appalling fact that, within one year, approximately two thirds of the population of the Commonwealth of Pennsylvania was without protection against the spread of communicable diseases, and that thereby health and life were seriously jeopardized and needlessly sacrificed, and

Whereas, It was conclusively demonstrated that deplorable ignorance prevailed as to the importance, practicability and efficiency of correcting these evils, therefore be it

Resolved, That the organization of the Department of Health as reported, its methods of procedure in educating the public and in enforcing the existing laws, be heartily endorsed; and that an expression of appreciation be given of the excellent results already achieved; and the unanimous coöperation of this body be vouchsafed.

Upon motion the Section adjourned.

(The Journal has not been able to secure the official minutes of the Section on Eye, Ear, Nose and Throat, but the above are approximately correct.)

Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, June 7, 1906. The president, Dr. Wilmer Krusen, in the chair.

In Memoriam: Dr. William H. Parrish. By Dr. Charles P. Noble.

Endometritis. Dr. Brooke M. Anspach said that Tucker has recently called attention to a lack of uniformity in the general view concerning the nature and the significance of endometritis. Hunner had drawn attention to a prevalent idea that leukorrhea is commonly an indication of endometritis. He thinks that quite the contrary is true and says that the cervix is much oftener the seat of a persistent discharge than the endometrium. Kelly has concluded from a study of the scrapings in a thousand cases of curetment that endometritis, aside from acute gonorrheal infection, is rare. Dr. Anspach thought Tucker's view justifiable, believing that the large number of forms of endometritis at present described lead to an overestimate of the importance and the frequency of the disease. A multiplication of terms exists, because the affection is classified from so many different standpoints. For example, "glandular," "hemorrhagic," and "gonorrheal" endometritis might be applied to the same individual case of chronic endometritis as indicating the lesion by its histology, its most prominent symptom, or its cause. With the acute forms there is less probability of confusion. In Dr. Anspach's opinion it is unnecessary to point out the endless variety of endometritis that results from a classification based on the symptoms. The terms "suppurative," "hemorrhagic," "catarrhal," "exfoliating," and "putrid" are sufficient indication of the extent to which such a classification might be carried. An anatomical classification or a classification that is based on the histology of the endometrium is to be preferred because of its simplicity and because it limits the number of descriptive terms. Thus, endometritis is reduced to acute and chronic forms; the chronic forms subdivided into glandular and interstitial. A few further subdivisions of the glandular are of interest chiefly to the pathologist. In order to determine the clinical importance of endometritis as it occurred at the University Hospital, Dr. Anspach had analyzed the findings in 322 specimens of endometrium that had been submitted to histologic examination. Tho specimens comprised the uterine scrapings from 144 cases of simple dilatation of the cervix, and curetment; 56 cases of trachelorrhaphy or amputation of the cervix and 25 cases of suspensio uteri. The endometrium was also examined histologically in 34 cases of hysterectomy for pelvic inflammatory disease and in 36 cases of hysteromyomectomy for fibroid tumor. Tho result of the examinations was as follows:—

	Cases	Endometritis	Normal
Simple dilatation and curetment	144	75	69
Trachelorrhaphy or amputation of the cervix	56	42	14
Suspensio uteri	25	13	12
Hysterectomy (pelvic inflammatory)	34	28	6
Hysteromyomectomy	36	34	2
	295	192	103

Among 27 other specimens there were 24 instances of endometritis. The following conclusions were drawn concerning endometritis: (1) The disease should be classified as acute and chronic; chronic forms may be subdivided by the pathologist into glandular and interstitial; each of these has several subdivisions that need not be considered clinically. (2) Chronic endometritis is usually complicated by another pelvic lesion, such as lacerated cervix, retroposition of the uterus, pelvic inflammatory disease and tumors of the uterus or ovaries. (3) Leukorrhea is not often due to uncomplicated chronic endometritis. (4) Uncomplicated chronic endometritis is exceptional and does not have much importance either from the symptoms that it produces or from the treatment that it requires. (5) Chronic endometritis, as a rule, is treated successfully only when it is treated in conjunction with its complications.

Dr. W. H. Wells said that his experience with cases coming to the clinic was that they had been the result of septic infection at the time of labor, and that comparatively few had been due to gonorrheal infection.

Hemorrhage in the New-Born. Bilateral Extrauterine Pregnancy. Dr. L. J. Hammond reported two cases and exhibited the specimens. The first case was that of a male infant born after a prolonged labor with forceps delivery; asphyxiated at birth, but revived after twenty minutes of artificial respiration. There was an instrument mark on the left side, just above the ear; but no scar on the head, face or other part of the body. The child was normal at birth. There was subsequent rise of temperature, which later subsided. On the ninth day there was another rise of temperature, which did not respond to treatment, most pronounced opisthotonos developed and death followed with convulsions on the fourteenth day. The pathologist's report showed extensive venous, hemorrhagic infiltration of the cortex and the meninges in the neighborhood of the superior longitudinal sinus. Upon opening the brain both lateral ventricles were found distended by an organic clot and the brain substance was displaced. The instrumental delivery had been promptly carried out and there seemed no reason to suspect the extensive intracranial lesion.

The second case occurred in a woman 31 years old, whose previous history was unimportant and who had been well previously. She had borne two living children. She was seen in consultation and a diagnosis of extrauterine pregnancy had already been made. Upon removal to the hospital for operation the condition was believed to be the usual extrauterine pregnancy of one tube only. It had ruptured, and the abdomen was found filled with clot and much liquid blood. As hemorrhage became profuse after the left tube had been secured the right tube was sought for, as almost certainly the one from which the new hemorrhage arose. The bleeding point was quickly found but not before the abdomen was again filled with blood. Investigation showed the blood coming from the right tube, which had also ruptured and was the seat of a pregnancy. It was concluded that the left tube had been ruptured before the operation, and the right during the handling of the viscera and the necessary manipulation to remove the blood clots and cysts which involved both broad ligaments. The specimens showed well the placental tissue in the tube. Microscopic examination confirmed the clinical picture of bilateral extrauterine pregnancy. The patient was doing well ten days after the operation, and a perfectly typical lochia was pouring out through the abdominal incision.

Ruptured Tubal Pregnancy with Secondary Attachment of the Ovum to the Cecum. Dr. William H. Wells reported the case of a patient who had had two children and one miscarriage, the latter occurring five years ago, since which time she has not been pregnant. The patient was in collapse when admitted to the hospital. Section showed the ovum to be entire and attached to the under side of the cecum. It had been expelled from the right tube, apparently some days before. Removal of the placenta was followed by free hemorrhage from the site of attachment; this was controlled by inverting that part of the wall of the cecum to which the placenta was attached and stitching with fine silk sutures, after which the abdomen was closed. The patient was well stimulated and subsequently made a good recovery.

Dr. William S. Higbee thought an interesting feature of Dr. Hammond's case was the extensive attachment of the placenta to the parietal peritoneum and intestines on both sides. The pregnancy had taken place at the fimbriated extremity on one side and a little inside of this on the other. There would not have been a canal for the discharge of this through the abdominal wall but the bleeding was so profuse that it could not be stopped except by packing with gauze. In the majority of cases under Dr. Hammond's care no drainage was used. In this case it was necessary for hemostatic purposes and this proved to be fortunate because of the discharge afterward.

Dr. William R. Nicholson was particularly interested in the case of hemorrhage in the new-born, because of the history of the moderately difficult axis traction, operative delivery and the development after the third day of symptoms closely allied to those of infection in a new-born infant. While the evidence pointed to the forceps or the difficult labor as having been the cause, he did not accept this as absolutely conclusive. He has seen a number of infections occurring in new-born infants that were evidenced merely by hemorrhagic symptoms with fever, and he thinks there is a certain element of doubt in this case. He inclined to the belief that there was a tendency to bleed from some general constitutional cause aside from the forceps application. Had the Simpson forceps been used he would be more inclined to attribute the injury to the forceps, believing that more injury is done by this forceps than by the axis traction instrument if the latter is used as it should be. With the general signs in such a case pointing to local involvement of the brain the chance, though a slight one, should be given to the child through operation.

Dr. Hammond in closing the discussion, said there had been extensive adhesion to the bowel in his case of extrauterine pregnancy. Regarding drainage when there is great shock from hemorrhage he leaves the drainage and packing out in cases in which the hemorrhage can be controlled because they prolong shock and encourage the formation of adhesions. In a case in which the bleeding was so general and the placental tissue was so abundant and adherent to all the pelvic structures he felt it to be risky to close the cavity. He therefore packed off the entire pelvic region. As remarked by Dr. Higbee this was fortunate. He had never seen such a perfectly typical lochia as occurred without any disturbance to the patient.

Regarding the case of hemorrhage in the new-born, Dr. Hammond had at first thought the forceps responsible, but had concluded after having talked with Dr. Nicholson that this might not have been the cause. They were applied skillfully and it did not seem probable that they could have caused the rupture of such a large vessel or number of vessels as to produce such an amount of hemorrhage in the cranial cavities, especially without any lesion to the skull. Infection might be thought the cause because in the first three days of the child's life there were no symptoms, which developed when one would expect an infective invasion to become manifest.

Stated Meeting, Thursday, September 6, 1906.
The President, Dr. Wilmer Krusen,
in the Chair.

Malignant Disease of the Ovary. Dr. H. A. Duncan in presenting this paper claimed that five per cent. of all ovarian tumors are solid and about fifteen per cent. malignant; carcinoma occurred sixty-eight times in 991 cases of ovarian tumors while sarcoma occurred but thirty-seven times. Solid tumors were said to be generally bilateral, small, smooth, regular in shape, with few adhesions and accompanied by ascites. A case of carcinoma of the ovary and secondary infection of the uterus, also a case of bilateral sarcoma (small round celled) occurring in Dr. Krusen's practice were reported. Carcinoma of the ovary more often primary, occurs at all ages; prognosis is bad. In sarcoma, spindle celled variety most common, metastasis occurs late, the duration is indefinite and malignancy is not to be compared to carcinoma.

Dr. C. C. Norris said that he had in his recent papers thoroughly covered the statistics of these tumors. The proportion of malignancy in solid tumors was given as small. Most of these were purely fibroma or spindle celled sarcoma. This reference was not to those partly cystic, but to the solid tumors. The percentage of small round cell sarcoma is small and nearly all are bilateral. In prognosis the microscope is of much value. In spindle celled sarcoma the prognosis is said to be fairly good; in small round cell sarcoma it is almost as bad as in adenocarcinoma and much worse than in simple adenopapilloma. The microscope will many times show a tumor to be benign which from the gross appearance and clinical symptoms had been thought to be malignant. The necessity of microscopic examination of a large number of sections of each tumor was emphasized.

Dr. Swithin Chandler expressed surprise at the statistics given by Dr. Duncan, since in fourteen years he had seen in his own practice only two cases of malignancy of the ovary; one in a black woman and one in a white woman. Neither had borne children. In the one case there was a fibroid tumor of the uterus and the uterus and ovary were removed at the same time. Death ensued three days after operation. In the colored woman there was no return. Both cases were sarcoma. Dr. Chandler believed that more malignant tumors, proportionately, were brought to the table in Europe than here; whether this was due to the food, or to the fact that people there work harder and do not come as readily for operation, he did not know. Although he had no proof for the statement, he believed that large meat eaters are more prone to cancer than those whose diet is largely vegetable. He did not, however, wish to be regarded as a vegetarian. Regarding the fever in Dr. Duncan's case he asked whether Dr. Duncan could explain its existence.

Dr. Duncan stated that the high temperature upon the day after the operation he would explain by "reaction," while a temperature of 107 degrees on the day of death he would say was caused by "disintegration."

Postpartum Relaxation of the Abdominal Walls. Dr. J. Thompson Schell said that the condition of the abdominal wall following childbirth had been much neglected and women allowed to leave their beds with relaxed muscles predisposing to intraäbdominal complications. Added to this there is often a marked diastasis of the recti, a condition probably equally serious. In all except the old multipara and in badly neglected cases it was claimed that a few simple Swedish movements combined with massage would in a majority of cases bring about a marked improvement. No bandage was needed in the treatment, although it was recommended during the first twenty-four to forty-eight hours for the comfort afforded and as an aid in the restoration of the intraäbdominal blood pressure. The treatment was advised to be carried out three times a day for the entire time in bed and continued twice daily for a month after leaving the bed. Great exhaustion, septic infection and excessive postpartum hemorrhage were mentioned as contraindications, at least, during the presence of any of these conditions. During convalescence from any puerperal complication the treatment would be found particularly useful in overwrought muscular relaxation following such complication.

Dr. J. S. Baer agreed with the conclusions of the paper and thought the fact, that after the puerperium and in later periods treatment is of value in strengthening the muscles, was often overlooked.

Dr. Alice M. Seabrooke recalled some similar work she had seen done some time previous which had been termed physiological movements for diastasis of the muscles. This had been given some time after the puerperium.

Dr. Wilmer Krusen inquired whether there was difficulty in having the patients practice the treatment. He had knowledge of the value of the method in cases of protuberant abdomens due to fatty deposits but had not seen the application of the method following labor. He also inquired whether there was any effect upon constipation.

Dr. Schell in closing spoke of the surprisingly large number of such cases he had observed since being interested in the subject. The method was regarded as simple and easy of application and he had no difficulty in using it with very poor people. He could say with certainty that these women left their beds with abdomens giving them no discomfort. He referred to Ashton's emphasis upon the importance of strong abdominal muscles which lessen the danger of malpositions in the pelvis.

Reports of County Societies.

BRADFORD—SEPTEMBER.

The regular meeting of the Bradford County Medical Society was held at the Robert Packer Hospital, Sayre, September 4, with Dr. G. H. B. Terry in the chair, and the following members present: Drs. Badger, Bird, Conklin, Cummings, Everitt, Fish, Harshberger, Herrmann, Hunter, Holcomb, Ott, Rinebold, Stevens, and Wright. Drs. Albert Coughlin, Athens, and G. S. Carpenter, Waverly, N. Y., were present as invited guests.

Dr. Theodore Wright gave an instructive paper on "Puerperal Complications, Causes and Treatment," in which special emphasis was placed upon the desirability of infrequent pelvic examinations during the first and second stages of labor. Dr. Ott opened the discussion and reported the successful use of antistreptococcic serum upon several patients who had been admitted to the hospital suffering from puerperal sepsis.

Dr. Carpenter gave the history of a case of intestinal strangulation due to an adherent Meckel's diverticulum which was successfully operated upon at the hospital.

A patient, three years of age, whose right leg had been caught in a mowing machine, was presented by Dr. Ott. At the time of the accident all structures of the leg had been severed except the posterior tibial artery and a portion of the gastrocnemius. Drilling and wiring the bones was resorted to and the healing of all structures was uninterrupted.

Dr. Bird presented a patient for examination, the subject of a large osteosarcoma of the left temporal fossa, in whom exophthalmos was marked as a result of postorbital invasion. This case brought forth an interesting discussion upon the use and abuse of Coley's Fluid.

H. S. Fish, Secretary *pro tem.*

BUCKS—August.

The Bucks County Medical Society met at Quakertown, August 8, with the following members present: Drs. Cawley, Fretz, Grim, Myers, Ott, Rice, Shaddinger, Thomas, and Vissel. Visitors: Drs. Beihn, Brown, Burkhardt, and Rahm.

Vice-president Vissel occupied the chair, and Dr. Myers acted as secretary. The resignation of Dr. E. C. Hancock, formerly of Yardley, was presented and accepted. Three applications for membership were received.

Subjects for discussion were presented by Dr. Vissel, "Bright's Disease"; Dr. J. I. Cawley, "Infection in Minor Facial Injuries"; Dr. A. F. Myers, "Scarlatina Infection of Wounds"; Drs. G. M. Grim and N. S. Rice, "Elimination of Toxins." All the subjects were freely discussed by the various members.

Anthony F. Myers, Reporter.

CLARION—July.

The Clarion County Medical Society met in the court house July 24, with the following members present: Drs. Beck, C. L. Clover, Dinger, Fitzgerald, H. N. and J. M. Hess, Hepler, Phillips, Rimer, J. F. Summerville, Summerville, Jr., Walker, and Wick. Drs. McKnight of Brookville, and Siggens of Oil City, guests, were also present.

The usual routine business incident to the quarterly meeting was transacted, after which case reports were heard from Drs. C. L. Clover, Siggens, Summerville, Jr., and Walker. Considerable discussion was indulged in over some of the subjects, especially the treatment of diphtheria aside from the use of antitoxin.

Dr. McKnight, the author of "The Pioneer History of Western Pennsylvania," contributed some facts which were new to many of the members present, relative to the early history of the Clarion and Jefferson county medical societies, which when first organized were one body.

After the meeting a banquet was held at the New Jones House, after which the remainder of the day was spent socially in and about the city. Taken altogether the meeting was one of the successful gatherings of the society. The next meeting will be held at New Bethlehem, for which we ask a large attendance.

R. A. Walker, Reporter.

DELAWARE—July, August.

The regular meeting of the Delaware County Medical Society was held on July 12 at 3 P. M., at the county home at Lima. There was a full attendance, and the meeting was called to order by the president. Drs. E. P. Strawbridge of Lima, and Norman D. Risley of Media, were proposed for membership.

Dr. William L. Rodman, Professor of Surgery at the Medico-Chirurgical College, gave a lecture on "Gastric Ulcer and Its Treatment." The subject was handled in a most able manner and was listened to with much interest and profit.

Following the lecture the physicians were shown through the institution. Those in charge of the home were complimented on the excellent condition in which things were kept, the sanitary condition being good. The buildings are overcrowded and an infirmary or small hospital building is needed so that the seriously sick can be cared for by themselves. Electric lights are being introduced which will be a great convenience.

Through the hospitality of Dr. D. W. Jefferis of Chester, an elaborate dinner was served. A vote of thanks was extended to the Board of Directors for the privilege of holding the meeting at the home.

By invitation of Dr. S. R. Crothers the regular meeting of the Delaware County Medical Society was held at the Spring-haven Country Club, August 16, at 3:30 P. M.

The meeting opened with the reading of the minutes of the previous meeting, also the minutes of the special meeting which was held in May to take action on the death of Dr. F. F. Long; there was also a reading of the resolutions drafted in memory of our late member. Dr. D. W. Jefferis was renominated district censor. Dr. Norman D. Risley was elected to membership. Drs. Stoddard P. Gray of Chester, and J. C. Wolfe of Ridley Park, were proposed for membership. Dr. Frank Evans was chosen member of the House of Delegates of the State Society. Drs. Gallager and Kalbach, alternates.

Dr. H. F. Taylor of Ridley Park gave a paper on "Tubercular Meningitis." A very general discussion followed.

Every one enjoyed the bountiful dinner which closed the meeting, and a unanimous vote of thanks was given the host, Dr. S. R. Crothers, for his entertainment.

Those present were Drs. Baker, Bird, Brown, Bryant, L. H. and S. R. Crothers, M. P. Dickeson, Easby, F. H., F. J. and W. K. Evans, Fussell, Gallager, Gottschalk, Gray, Jefferis, Kalbach, McCool, Morton, Neufeld, Stitler, and Taylor.

ELLEN E. BROWN, Reporter.

LEHIGH—SEPTEMBER.

The regular meeting of the Lehigh County Medical Society was held in the Administration Building at Allentown, Tuesday, September 4, at 2 P. M. Those present were Drs. Bleiler, Dickenshied, Fetherolf, Greiss, Guth, R. K. and W. H. Hartzell, Hendricks, Henry, Herbst, Hertz, Kline, Litzenberger, Mack, A. N. Miller, Otto, Reichard, Richards, Ritter, Seiberling, Smith, Weaber, and Weida.

The program consisted of papers and discussions on typhoid fever. Dr. J. W. Richards of Slatington, presented a paper on "Remarks on Typhoid Fever from a General Practitioner's Standpoint," which was discussed by Drs. H. H. Herbst, and E. H. Dickenshied. The second paper was "Report of a Case of Typhoid Fever Perforation with Operation and Recovery," by Dr. R. K. Hartzell; discussed by Dr. W. D. Kline. "The Antiseptic Treatment of Typhoid Fever" was the subject of the last paper, which was read by Dr. P. O. Bleiler, and discussed by Dr. C. J. Otto.

W. A. HAUSMAN, JR., Reporter.

MONTGOMERY—SEPTEMBER.

The first meeting after the summer vacation of the Montgomery County Medical Society was held in the directors' room at Charity Hospital, Norristown, September 5. The program consisted of a symposium on the diseases which prevailed in the practice of the members of the society. There was a large attendance, and reports from many of the physicians upon their experiences during the summer vacation were given. These reports included the diseases which usually prevail in the summer months. Especial mention, however, was made of so-called influenza attacks, coupled with fever, pains and aches of the body, some sore throat and general malaise, assimilated similarly in their early stages with symptoms of typhoid. The symptoms were more protracted than usual in case of influenza, but yielded after a few days or a week.

Reports on several cases of typhoid fever of a very severe type accompanied by hemorrhage of the bowels, were also made. Nothing new was developed in either symptoms or treatment, except that they were unusually severe. A fatal case of dysentery involving the mucous lining of the whole colon was reported. A postmortem examination revealed an unusual condition of the large bowel, an extensive destruction of the mucous membrane being shown.

Whooping cough, also, was reported as being quite prevalent and of a severe type.

A general discussion followed these reports.

The society is growing in numbers and a great interest is manifested in its proceedings. JOSEPH K. WEAVER, Reporter.

NORTHAMPTON—SEPTEMBER.

The regular bimonthly session of the Northampton County Medical Society was held at the Mountain View Hotel, Pen Argyl, September 21, 1906. After the reading and adoption of the minutes of the previous meeting, the application for membership of Dr. Harry B. Fralic, Chapman's Quarries, was received and referred to the Board of Censors.

The question "suggesting that resolutions be adopted to the effect that members of the society refuse to make examinations for old line life insurance companies for less than five dollars" was deferred for final action until such time as the question might receive more mature deliberation.

The committee appointed to prepare resolutions on the death of Dr. George N. Swartz made its report.

There being no further business, the society adjourned to meet at the Eagle Hotel, Bethlehem, on the third Friday of November. J. J. QUINEY, Reporter.

PHILADELPHIA—SEPTEMBER 26.

The meeting of the Philadelphia County Medical Society was held on September 26, with Dr. William M. L. Coplin in the chair.

Dr. Judson Daland gave an illustration by lantern slides of leprosy as seen in different countries.

Dr. J. F. Schamberg gave an illustration by lantern slides of leprosy as seen in Philadelphia, and of the cutaneous manifestations of leprosy and syphilis. Speaking of the nervous and of the tubercular types of leprosy, he remarked that in the former type there was evidence of progressive neuritis, and in the latter, infiltration of the skin with tubercles having a predilection for the face, but which might attack any portion of the cutaneous surface. In most cases the two types are found mixed. While the mode of infection is not definitely settled, the most generally accepted view is that Bacillus lepræ is introduced through the nasal and upper respiratory mucosa. The subject of leprosy and the sanitary precautions which should be taken were considered matters of special interest in view of the new possessions of the United States in which many cases exist. Many patients might be brought to this country in the incipient stage of the disease. It therefore becomes the duty of all physicians to acquaint themselves with the symptomatology of the disease. Equally is it their duty to allay the almost hysterical fear of the disease exhibited by the public, since it is not a contagious disease in the sense in which the term is applied to scarlet fever or smallpox.

Dr. M. B. Hartzell referred to the wrong attitude of the public toward the subjects of leprosy as exhibited in the recent account of the treatment of a leper from Baltimore. The medical profession should make known the fact that while leprosy is contagious, it is very feebly so. The great length of the period of incubation and the theory that the disease is due to eating badly cured or putrid fish were referred to.

Dr. H. M. Christian had thought it possible to confound the tubercular syphilid with the nodular form of leprosy, but with the cases as represented by the slides showing the nodules much larger than those of syphilis, with the increased infiltration of the skin and with the leonine countenance a mistake in diagnosis seemed impossible. He emphasized the importance of enlightening the public regarding the feeble contagiousness of the disease and thought the recent spectacle of sending a poor leper from one town to another was a disgrace to American civilization.

Dr. William M. Welch recalled some of

the subjects of the pictures shown on the screen, several of whom had been in the Municipal Hospital for a number of years. In the case of the woman, a native of Philadelphia, who had leprosy, the source of the contagion could not be discovered.

Dr. Theodore H. Weisenburg spoke of leprosy in the Philippines as he had observed it in that country.

Dr. B. Franklin Royer's experience with leprosy was limited to one case, that of a Sandwich Islander admitted to the Municipal Hospital. He was given mercury and iodids in doses almost as large as a syphilitic patient could bear. The lesions cleared up in about nine months and the man was pronounced cured, the only case known to have been cured in Philadelphia.

R. Max Goepp, Reporter.

SOMERSET—July.

The third quarterly meeting of the Somerset County Medical Society, was held in the Y. M. C. A. parlor at Meyersdale, on July 17, 1906. The attendance was good.

Dr. Henry Wilson called the meeting to order at 1:30, and the regular order of business was taken up. Under the head of new business the matter of illegal and itinerant practitioners was informally discussed and the president was selected to look up fully the law in the matter and report at the next meeting with a view of remedying the evil.

Dr. E. Hunter Perry reported a number of cases of fracture of femur treated with the Agnew splint, in none of which was there any shortening.

The patient is put upon a fracture bed and kept there with a sufficient amount of extension until union is complete. One of the cases reported was a double fracture. Ages of the patients ranged from four to forty-two years; three or four years after an injury, there was no sign of shortening. He stated that about one sixth of all fractures are those of the femur, that they are usually hard to treat, and, as shortening is so frequently the result in such cases, he was glad to make this report.

Drs. C. P. Large and Bruce Lichty reported cases treated in the same way without shortening. Dr. R. J. Hemminger reported two cases treated by plaster bandage, without shortening, in children five and eight years old respectively. Dr. Wilson has used the same treatment with the same results, and called attention to the use of a perambulating splint that gave great comfort to the patient.

Dr. R. J. Hemminger read a timely and interesting paper on "Infant Feeding," which was on the percentage plan. This paper was discussed by all present.

Dr. H. I. Marsden reported an unique case. A man fell from a small tree, and a shoot or sprout of the tree penetrated the body near the anus, extending upward about nine inches, and breaking off close to the body. When he leaned forward so that some assistant workmen could remove the object he felt the upper end of it in the region of the stomach. It was removed with some difficulty, and the man taken to his home. Two days later he was taken to the hospital and in the course of a few days an abscess formed at or near the upper extremity of the wound; this was opened, rapid recovery was made, and in a few weeks he was entirely well.

Dr. E. Hunter Perry was nominated for district censor at this meeting. Dr. C. P. Large was elected to the House of Delegates of the State Society, and Drs. Henry Garey and W. H. Meyers alternates.

The society then adjourned to meet at Salisbury, on Tuesday, October 16, at which time officers for next year will be elected. A very full attendance is desired.

H. Clay McKinley, Reporter.

"Full many a man both young and old
Has gone to his sarcophagus
By pouring water icy cold
Adown his hot esophagus."

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X. No. 2. | Athens, November, 1906. | Subscription: $2.00 Per Year.

OFFICERS FOR THE YEAR 1906-1907.

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Isaac C. Gable, York.

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Second—William B. Ansley, Saltsburg.
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Fourth—Henry M. Neale, Upper Lehigh.

Secretary:
Cyrus Lee Stevens, Athens.

Assistant Secretary:
Theodore B. Appel, Lancaster.

Treasurer:
George W. Wagoner, Johnstown.

TRUSTEES AND COUNCILORS:

Thomas D. Davis, Chairman, 261 Shady Ave., Pittsburg, Term Expires 1908.
John B. Donaldson, Canonsburg, Term Expires 1909
William S. Ross, Clerk, Altoona, " " 1909
David H. Strickland, Erie, " " 1909
Geo. W. Guthrie, Wilkes-Barre, " " 1908
George D. Nutt, Williamsport, " " 1908
Henry Beates, Jr., Philadelphia, Term Expires 1907
Luther B. Kline, Catawissa, " " 1907
Thomas M. Livingston, Columbia, " " 1907
Isaac C. Gable, York, Ex-officio.
Cyrus Lee Stevens, Athens, "

Committee on Arrangements: Fremont W. Frankhauser, Chairman, 230 South Sixth St., Reading.
Committee on Scientific Work: Theodore B. Appel, Chairman, 305 North Duke St., Lancaster.
Committee on Public Policy and Legislation: Henry Beates, Jr., Chairman, 260 South 16th St., Phila.
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Committee on Credentials, House of Delegates: Alexander R. Craig, Chairman, Columbia.
Committee on Asylum for Inebriates: Theodore Diller, Chairman, Westinghouse Building, Pittsburg.
Committee on Religious Newspaper Advertising:

OFFICERS OF SECTIONS:

Medicine—John A. Lichty, Chairman, 4634 5th Ave., Pittsburg. Herbert H. Herbst, Sec'y, Allentown.
Surgery—John H. Gibbon, Chairman, 332 So. 15th St., Philadelphia. Charles P. Stahr, Sec'y, Lancaster.
Specialties—Lewis H. Taylor, 83 South Franklin St., Wilkes-Barre. Robert Milligan, Sec'y, Pittsburg.
Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association: President, William J. Mayo, Rochester, Minnesota; President elect, Joseph D. Bryant, New York; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago.
Next Annual Session, Atlantic City, N. J., June 4-7, 1907.

Address.

ORATION ON MEDICINE.

BY DANIEL W. JEFFERIS, M. D.,
Chester.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

I appreciate very highly the honor that has been thrust upon me in being invited to deliver what is called the "Oration on Medicine." I do not know whether what I shall say ought to be designated by such a high term; but, as I understand it, being a general practitioner of medicine of some years' standing, I am to speak to other general practitioners of medicine, some of them also of some years' standing, upon some subjects with which we are all doubtless familiar, for I question very much, whether, in these days of numerous medical magazines coming daily and weekly, and the numerous young men coming into our offices every day extolling the virtues of their remedies, any one of us can remain ignorant of the progress which has been made in medicine. You have all noticed, perhaps, in the past twenty years what has seemed to be, may I call it, a decadence in the general practice of medicine. A noted surgeon comes to this country to set the limb of a daughter of a noted financier, and the whole population of America is stirred from Maine to Texas and from Florida to Oregon. Any number of general practitioners of medicine might land on American shores to-morrow, and nobody would know anything of it; yet, you and I know, as general practitioners,that it is the general practitioner that does the major part of the work in medicine in this country.

I asked my friend, Dr. S., a member of this society, who is a specialist in medicine, some twenty years ago why the general practitioner seemed to be declining in public esteem, and he told me the reason was apparent; it was because "you" (meaning me) "and the rest of us are ignorant." That is the reason of the decline in the public esteem of the general practitioner according to Dr. S.

Looking at the matter a little while, those of us who have been practicing for some years must know that in diagnosis of disease, in certain directions, we have made very great advance, that we know to-day very much more about diseases than we did twenty or thirty years ago, that we have called to our aid certain instruments of precision which have aided us in making these diagnoses, that we have learned to lean upon those instruments of precision, but have we not neglected some of the old things? I am not objecting to any of the new methods of diagnosis, but are we not to-day neglecting, and have we not in the last few years been neglecting some of the old methods of diagnosis? Have we not lost, to a certain extent, our powers of observation, and have we not said that because this patient has a temperature of 104 degrees, he is necessarily a very,very ill patient, without examining into his condition any further, when you and I and all general practitioners know that a man may have a temperature of 104 degrees without being very sick or very dangerously ill? We have neglected the reading of our old books. I was told by a young man going out to buy his library that a medical book two or three years old was of no use any more. He asked me what he should buy. Said I: "There is one old book I think I would buy, if you can find it,—Pereira's Therapeutics and Materia Medica of 1850." You will find no better description of disease in any book than in the book of George B. Wood of the University of Pennsylvania, published about 1856, or finer description of disease aside from the modern methods of diagnosis than in Watson's Principles and Practice of Medicine, lectures delivered in London long before the majority of you gentlemen were born. I am in favor of holding on to what is good which is new, but I am also in favor of not letting go of that which was good in the past, and all must remember that our profession has been built up gradually from other foundation stones, and it is well for the young man entering general practice to look back over some of the old things that were known and approved of and believed in by the men who have gone before us. The advance has been in the line of diagnosis; it has not been in the line of treatment. In what way do we treat disease better now than we did twenty or thirty years ago, except in these two particulars,—in the hygienic care of the patient (which I will admit is one of the greatest factors in the course of a disease) and in the use of the trained nurse? Take away our newer knowledge of hygiene, and take away our trained nurses, and I do not believe our typhoid fever patients or our pneumonia patients would get along any better than they did when we were younger. We have not paid that attention to our medicines intended to cure patients that we should have paid. You old men, you and I remember that calomel was one of the best topical applications we could find. That was long before we knew anything of antisepsis. We use it to-day, some of us old chaps, in place of iodoform, because there is no smell and it acts better.

The ordinary family physician has come to be a sort of a switchman to shunt the patient to the man who can cure him. A gentleman came down to our town a few weeks ago and lectured on a branch of surgery. It was a very good and very able lecture, and he said in his way, "Oh, they have good doctors at Podonk; why, when I am called to Podonk, they tell me what is wrong and I go there and cut it out at once. I let them take care of the case and if anything occurs, why, of course, they are to blame." General practitioners of medicine, who actually knew what was the matter before they sent for this man to operate!

Why is the surgeon held in such high esteem? There is a reason for it, and it would be well to inquire first, perhaps, why it is. It is because he has a definite object. When that gentleman came down from the neighboring city of Philadelphia to our town or to this other town where they had good doctors, to operate, he came down there knowing that this person had an appendix. He knew about where that appendix was. He knew that he had a knife sharp enough to get into that appendix, and he knew he could cut it out and put it in a bottle. There was something *done*, something *doing*, and that is what we want to-day. Then they put it into the newspaper, that Mr. So-and-So had had his appendix removed. Of course, in the funeral notice which came a few days later, there was nobody to blame but the general practitioner who had charge of the case afterward. The surgeon comes down and takes out the appendix or ovary, or takes out whatever is sick. Why, in my day, gentlemen, when I was younger, surgery was said to be the opprobrium of medicine. If you could help it, it was the last thing to do, to cut off a man's leg or arm. The time is coming in the practice of medicine when the general practitioner may say, "Yes, you would have had a case of appendicitis here, but I looked after this patient, gave him medicine, and prevented it." This is our field, to prevent so much of this surgery. You know that four or five years ago every woman wanted to have her ovaries removed, or something of that kind, and that everybody wanted some surgery done. The reason that they wanted surgeons to do this was because they wanted to have *something done*. The surgeon has *done* something, and that should be the idea when we give our medicine. The general practitioner should imitate the surgeon by having confidence in himself. We have been taught this a good while, and yet, we go into a case now and then with fear and trembling. We do not have confidence in ourselves, and consequently, we do not have confidence in the tools that we are going to use. What sort of a surgeon would that be who would go into a case with shaking hands and dull blade? We ought to learn our tools, ought to learn our medicine so well that we know what it will do. We do not give a man calomel and say, "I *guess* within a few hours after you have taken this you will have a greenish stool"; we tell the man that this thing will cure him, if he takes the medicine.

I was taught by Stillé, of blessed memory, that there were no specifics in medicine, and by old Dr. Pepper, that there were no specifics in medicine; but medicines are specifics in a certain sense, because they all have specific action. We have some specifics in medicine; quinin will cure malaria, —I do not know whether any of you know that or not, and whether you know how to give it; you can walk up to a man and say, "You have had your last chill, if you take the medicine as I direct." Brimstone and lard will cure itch, and it is not necessary to hunt any further for an itch cure. I used to know a man up in Chester County who would say, "Now, this is true, drive a nail there." When you get a thing that you know will do a thing, "drive a nail there." I think it is a good Scriptural saying to "hold fast to that which is good."

There are said to be great advantages for a young man now in taking the internship in the ordinary hospital, and I think that probably is true. It is well for a young man graduated in medicine to come to our Chester hospital, or to some other little hospital like that, and live in it a year and see every case that comes in; but I do think that a better thing for that young man would be to take him into the woods and set him down somewhere to practice medicine by himself, ten or fifteen miles from anybody. That is what would make him *think*. I went to a case one time, which was twenty miles from any doctor, when it was absolutely necessary to do a craniotomy, and all the tools I had were a big jackknife and an old Hodge forceps. I did it, and there was no sepsis; I did not know anything about sepsis, and the woman lived and made a good recovery. I did it, because I had to do it. If I had been in Chester where I could have called in six or eight colleagues, I would have had no better result.

There is another thing that I think we ought to do. I do not know that it is a correct grammatical expression, but a fellow wants to "keep his head." I was called in the other day to a case of pneumonia attended by a young man,—a very serious case of pneumonia. I went over the case carefully; I removed the clay poultice and examined his chest thoroughly. I went out with the young man to talk over the case and found that he had been waking that poor fellow every fifteen minutes to give him a different kind of medicine! That was an actual fact, a young man practicing medicine, one of our modern educated young men, and he was waking that poor fellow every fifteen minutes. I said to him, "Why, do you not know that about to-morrow there will be a crisis, and you want to save this patient's strength? Stop giving him medicine." The doctor had simply *lost his head.* He did not know what to do, which medicine to give, or which not to give. He had lost his hold and the team had got away with him, away out in the country.

I saw a letter the other day—I want to illustrate the modern method of the practice of medicine—from a distinguished specialist in Philadelphia which was written to a young physician in our town who had sent a patient to consult him, with directions, of course, asking him to send a letter and describe what he would do. In the first place, in this letter there was no diagnosis of the disease whatever. The nearest attempt at a diagnosis or suggestion of a diagnosis was that the specialist thought it might be tuberculosis since he said the sputum ought to be examined. I judged from the letter that the patient must have had a cough. There was no prognosis. There were prescribed twelve different sorts of remedies, three of which were recent proprietary remedies out of the shop. It is not more than three months since these proprietary remedies came first into my office; when the young man came in to inquire concerning them I told him they had fulfilled the first law, that they had not done any harm, and I showed him how they had not done any harm,—by being left on my desk. Three of these proprietary remedies and the other nine in a prescription! It was a prescription which reminded me of the Frenchman's "Contradictionaire." He said that in Philadelphia you have a drink that you put whisky in it to make it strong, water to make it weak, lemon to make it sour, sugar to make it sweet, and say 'Here's to you' and drink it yourself." It seemed to me that this prescription with the three proprietary remedies and the nine different drugs in it was similar. There is not a man on earth who could tell what those drugs mixed up would do in any given case. That is the modern practice of medicine, and that is the thing we want to get away from if we want the general practitioner of medicine to stand where he belongs, right at the head of the procession.

I am reminded of the "clay poultice." When I was a boy living on the banks of the Brandywine, with the other boys I used to go swimming in that classic stream and we used to throw stones at the yellow jackets. When the yellow jackets would get in their work our immediate resort was to the red clay which we plastered on and cured the yellow jacket stings. In '62 or '63 I marched up here to Huntingdon carrying a musket; the men got galled under the arms, and their favorite cure was a dry clay poultice. A distinguished friend of mine in '73 or '74 came out with a remedy for all sorts of diseases, which was nothing more nor less than the ordinary red clay which could be used externally or internally. It remained for a genius having the "commercial instinct" away out in Denver to change the color of clay to blue, put it up in cans, sell it for a dollar a pound, and then it gets into the Pharmacopeia of the United States. That, of course, means its downfall. What will be the next thing I do not know. We could not afford when boys on the Brandywine to pay a dollar a pound, and we just snatched it out of the bank.

We talk about the compensations in the practice of medicine. I believe there are more compensations in the general practice of medicine than there are in any other occupation, either inside or outside of the profession. What man in the community has more and closer friends whom he knows, from the grandfather down to the great grandson? He knows the whole family, loves them even as he loves members of his own family, and while the compensation may not be great in dollars and cents, yet I say that in all the things which go to make up the sum of life, there is no gift on the face of the earth which equals that which comes to the general practitioner of medicine.

Original Articles.

SOME CAUSES OF INEFFICIENCY IN MEDICAL PRACTICE.

BY JOHN B. ROBERTS, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Lack of Equipment for Prompt Service. The patriot desirous of saving his country was told to trust in the Lord and keep his powder dry. The physician anxious to serve, and perchance save, his patient should see that he always has professional tools with him. A clinical thermometer, a hypodermic syringe, a lead pencil, a pocket case of instruments, and a few powerful medicinal tablets are as needful to him as the dry powder to the soldier. A doctor who has to send for his spectacles or any other necessities of his calling, before he can relieve agony or save life, would better be a plumber or carpenter. Such mechanics are notorious for returning to the shop for tools before they can begin to stop a leak or mend a chair.

Carelessness in Observation. Many mistakes in diagnosis and treatment are attributable to hurried and careless examination. It is an inefficient doctor who tells a short-breathed patient that he has asthma, when the urine has not been analyzed and the chest not ausculted. More than once have I found a temperature rise, after a surgical operation, improperly attributed to sepsis in the wound; because the medical attendant had not been alert enough to examine the lungs for a pneumonia. On the other hand, I have come near remaining in ignorance of an important temperature rise, due to sepsis, because a nurse accidentally omitted one day's temperature readings from the official chart. An efficient practitioner must not only watch the symptoms of the patient, but the actions and records of the nurse and family. He must ever be keen-eyed, open-eared, and wide-awake; even then some important detail may occasionally escape his notice. Doctors, therefore, can not afford to have their intellectual acuity blunted by beer, tobacco, or unnecessary loss of sleep; for a successful medical career demands accuracy and eternal vigilance.

Indefiniteness in Giving Orders. Attendants on the sick should be given directions as to medication, diet and hygiene with definiteness and clearness. Much harm has often occurred from misunderstood or indefinite orders and carelessly written prescriptions. It is a constant wonder to me that many resident physicians in hospitals write so execrably and spell so originally. Even bachelors of arts and of science lack efficiency in these regards. To write nitrate of bismuth so that it looks like nitrobenzol, or to abbreviate codein so that it looks like calomel, is not good practice, even if the nurse or apothecary is able to know what is intended. Death may result from such mistaken orders. To kill a man by bursting his intestine with a large enema given by hydrostatic pressure from a high level is a professional tragedy which may occur from lack of definite instructions to a subordinate. A child may be scalded to death by putting it in an over-heated bath. An infant may be drowned by leaving it alone in a tub of water, where it may fall on its face. These calamities have happened.

Want of Self-confidence and Tact. Repose, as of conscious power, and the modest but confident voice of self-reliance are mighty aids to successful control of the sick. Vacillation in opinion, frequent change of medicine, and ineffectual command of the situation from want of tact are bad in the sick room. They are soon followed by a lack of confidence in the ability of the physician, similar to that seen among soldiers with an inefficient captain. Many men with medical knowledge fail to be successful practitioners because they have not the bearing of effectiveness. As a horse feels through the bit the character of his driver, so the keen invalid may know the character of his doctor by seeing him enter the room.

Failure to Appreciate the Value of Common Remedies. Clean air, clean water, clean food, and sound sleep, though the cheapest of all remedies, are the most neglected. It has taken many years to teach doctors and laymen that even tuberculosis of the lungs may be cured by these agencies. Many other affections are much alleviated and even cured by their employment. Several hours in the open air may conquer a restlessness that bromids and other nervines do not abate. A few glasses of water may wash out the kidneys and empty the bowels in a more satisfactory way than an official diuretic or laxative. Proper food and a good night's sleep may be of more benefit than the medical tyro's stimulants and tonics given to control depression or shock. Why compel a patient to swallow a diuretic pill when a cup of coffee may be more agreeable and equally effective? Why depend on massage, Swedish movements, and bitter tonics given in a curtained bed, in an over-heated room, in a dark unventilated house, when Providence has supplied clean air, clean water, and a chance for bodily exercise in the fields and on the house tops. It is better to scrub the back yard with a broom and hang out the wash on a flat, than to depend on a masseur for exercise and the druggist for one's appetite. Have we not all seen patients nearly smothered with antiseptic fumigations, recommended by wily advertisers, when it was the sunshine, the air, the water, obtainable at little cost, that were needed to hasten cure? Why give oxygen occasionally instead of fresh air all the time?

Loss of sleep probably retards convalescence more often than is usually recognized. I have saved drugs and given healthy slumber by simply ordering a patient to smoke his customary tobacco, which hospital rules had prohibited. One of my hernia patients spent many sleepless nights after operation, until I discovered that in health he always slept on his abdomen. I ordered him to do so again, and he at once slept deeply. I believe that some of our cases of postoperative insanity and hysteria are due to our failure to recognize the vital importance of sleep. The doctor often leaves his patient in the hands of an attendant or nurse and does not have opportunity to estimate the mental strain of vigil occurring night after night. Bathing, shutting out noises by plugging the ears, using single beds, sleeping on roofs or porches or with the head stuck out of a window, and similar expedients will often be sufficient to induce sleep. If they fail, drugs so employed as to avoid habituation may be required. Do not forget that strychnin, given as a stimulant and tonic, is often the cause of sleeplessness.

Insufficient Doses of Medicines. Do not think that I am opposed to medicinal agents, because I urge the use of plain remedies and the exercise of common sense. I believe in drugs, when drugs are needed; and I believe in giving efficient doses. Nothing seems so fatuous as playing with drugs in insufficient doses. When one desires to divide skin or muscle, one needs a knife that will cut. So also when one needs a drug, it must be pure, it must have power. The physician must know not only what he is giving, but how much. Besides this, he must have courage to give enough.

Chloral, potassium bromid, mercury, potassium iodid, codein sulphate, and hyoscin hydrobromate are a few of the valuable drugs frequently given in insufficient doses. Much of the vaunted value of secret nostrums (the disgrace of the present era) comes from their use by ignorant and careless practitioners, who unwittingly give larger doses of well-known remedies than when they prescribe the same remedies in official preparations. A man who would usually prescribe two grains of chloral, may, unknown to himself, give ten grains of the same drug in a secret mixture. As a result his patient sleeps; and he, poor ignoramus, proclaims that "Soporifica" of the "Fraud Chemical Company" is superior to chloral of the United States Pharmacopeia.

To try to put a patient to sleep with five grains of chloral and ten grains of potassium bromid, when he needs fifteen grains of one and forty of the other, is as useless as to hope to cure bone syphilis or brain syphilis with eighty or ninety grains of potassium iodid daily when the pathological condition demands eight or nine hundred grains a day. Codein sulphate as a hypnotic should be given hypodermically in doses of from one to two grains. There need be little expectation of inducing sleep after operation by small doses. My usual prescription is codein sulphate, one and a half grains, with hyoscin hydrobromate, one fiftieth of a grain, given hypodermically a few hours after operation. This may be repeated in the course of a few hours, if the patient has pain or is restless. I mention these doses to show that I am not opposed to drugs, and that I believe in effectual medication when it is demanded by the symptoms.

The employment of drugs in medical practice should resemble the resort to surgery. The guiding principle should be: "No drugs and no surgery, unless necessary"; when necessary, "effective drugs and effective surgery."

A DISCUSSION OF SOME OF THE NEW FEATURES OF THE UNITED STATES PHARMACOPŒIA OF 1900.

BY ADOLPH KOENIG, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The United States Pharmacopœia has never been a popular work with the members of the medical profession. The reason for this lack of appreciation must unquestionably be laid at the door of the medical colleges. This can easily be substantiated by reference to the literature emanating from the members of the teaching forces of medical colleges, where unfamiliarity with the Pharmacopœia seems to be the rule rather than the exception. As an example of the general unfamiliarity, I need only cite some of the errors in nomenclature as seen in the writings of both old and recent graduates where the name of the principal alkaloid of opium is designated as "morphia," in place of the official title of "morphina" in spite of the fact that for twenty years or more the former title has been obsolete. The same holds good with regard to the alkaloids of nux vomica, cinchona, etc.

Up to the time of the last revision, it must be conceded, the Pharmacopœia offered little of interest to the physician aside from an alphabetical list of official drugs and their preparations. The characteristics of crude drugs and their preparation into forms suitable for internal or other uses are necessarily mainly for pharmacists, and hence teachers in medical colleges practically ignored the work in its entirety. Another reason for the unpopularity must, I believe, be referred to the druggists. While schools of pharmacy require perfect familiarity with the Pharmacopœia, the modern pharmacist often loses sight of it as soon as he has graduated, and gives special attention to proprietary preparations which he doubtless finds more remunerative, at least for a season. Pharmacists have done practically nothing in the way of calling the attention of the medical profession to the official preparations of the Pharmacopœia or the compounds contained in the National Formulary. Were the pharmacists to present to the members of the medical profession systematized data concerning the pharmacopœial and National Formulary preparations, from time to time, much would be accomplished to avert the threatened commercialization of pharmacy as well as to stem the tendency which attracts many physicians to assume the rôle of dispensers of ready made tablets and of proprietary and often secret nostrums.

The eighth revision of the United States Pharmacopœia, technically that of 1900, contains one feature of interest to physicians not found in the earlier editions; namely, the dosage of the crude drugs and their official preparations. This will doubtless have the effect of establishing a legal status on the subject of dosage with which all physicians should be familiar; the figures given are intended to represent the average approximate dose for adults in the metric system followed by the approximate equivalent in the ordinary weights or measures. Considerable difficulty will be experienced here, however, in estimating the dose of the more potent liquid preparations usually administered in drops. In these cases the equivalent of the cubic centimeter, or a fraction thereof, is given in "minims," and when it is remembered that a minim of some of the liquid preparations represents less than one drop and in others as much as four drops, the confusion which is created becomes apparent.

One of the chief defects, in my opinion, in the present edition, may be noted in the absence of the list of official preparations which formerly followed the description of all crude drugs. In order to discover whether or not any given drug is represented by official preparations, it is needful to search through the index or throughout the book under the head of extracts, fluid extracts, tinctures, etc., entailing not a little loss of time and perhaps disappointment.

Of the new drugs placed on the official list, the so-called synthetics probably take first rank. None of these new official drugs are now protected by patent in this country. The committee on revision wisely inserted them under their chemical names in the majority of instances. Some of these names may seem meaningless and unwieldy, especially to the older members of the profession whose knowledge of chemistry is not equal to that of the recent graduate. I am indebted to a progressive pharmacist for information indicating the necessity of using the official rather than the old proprietary names of some of these drugs. Acetphenetidin (phenacetin), one of these new officials, costs in the open market $1.35 per pound, while under its copyrighted trade name it costs $4.80 per pound. Hexamethylenamine, another new official, costs $2.50 per pound, while under the various copyrighted names it costs respectively, as urotropin $9.60, as uriton $12.80, as helmitol $9.60 and as formin $4.80 per pound. When a prescription calls for this drug under one of its proprietary names the druggist may not dispense the official one, even though chemically identical. The financial hardship on the purchaser, it is needless to say, is evident.

Other new chemicals, though these do not represent all, which should be prescribed under their official names are: Sulphonethylmethane, representing "trional," sulphonmethane, representing "sulphonal," and thymol iodide representing "aristol." Another reason, aside from the matter of cheapness, why the official name should be used is that the Pharmacopœia exercises a supervision over the purity of all drugs in the official list and the druggists who dispense them may be held responsible. In the case of patented and proprietary articles the Pharmacopœia necessarily can exercise no control over their purity.

In response to a world wide demand for uniformity in nomenclature, many changes became imperative both as regards single or classes of drugs. One of the most important changes in the name of a class of preparations is in that of the fluid extracts. The Latin title, for example, in former Pharmacopœias, of this preparation of ergot was *Extractum Ergotae Fluidum*, now it is *Fluidextractum Ergotae*, and this rule holds good in the case of all other drugs official in the form of a fluid extract.

All salts of alkaloids of the old hydrochloras or hydrobromas series are now made to end in hydrochloridum, and hydrobromidum, thus *quininae hydrochloras* becomes *quininae hydrochloridum*.

Many other changes in nomenclature were made. To some of the more important I may call attention; for example:

Acidum arsenosum becomes *arseni trioxidum*.

Acidum chromicum becomes *chromii trioxidum*.

Alumini hydras, becomes *alumini hydroxidum*.

Liquor potassae becomes *liquor potassii hydroxidi*.

Liquor sodae becomes *liquor sodae hydroxidi*.

Magnesia becomes *magnesii oxidum*.

Potassa, becomes *potassii hydroxidum*.

Soda becomes *sodii hydroxidum*.

Sodii hyposulphis becomes *sodii thiosulphas*.

Sodii sulphocarbolas becomes *sodii phenolsulphonas*.

Acidum carbolicum becomes *phenol*.

Amyl nitris becomes *amylis nitris*.

Ammonii valerianas becomes *ammonii valeras*.

Chloral becomes *chloralum hydratum*.

Emplastrum resinae becomes *emplastrum adhaesivum*.

Ferri oxidum hydratum, becomes *ferri hydroxidum.*

Methyl salicylas, becomes *methylis salicylas.*

Naphthalinum becomes *naphthalenum.*

Naphtol, becomes *betanaphthol.*

Oleum betulae volatile becomes *oleum betulae.*

Petrolatum molle and *spissum* become *petrolatum.*

Petrolatum liquidum remains as such and *petrolatum album* (representing the lighter and more volatile portions of petroleum) is added.

Resorcin becomes *resorcinol.*

Salol becomes *phenylis salicylas.*

Spiritus glonoini becomes *spiritus glycerylis nitratis.*

Veratrum viride becomes *veratrum.*

Many other minor changes were made to which reference can not be made for lack of time. One hundred and twenty-two new drugs and preparations were added to the official list. Some of these which seem of greater importance are: *Aconitina, colchicina, cresol, gambir, gelatinum, glandulae suprarenales siccae, glandulae thyroideae siccae, guaiacol, liquor formaldehydi, pelletierinae tannas, petrolatum album, sabal, scopola, scopolominae hydrobromidum, serum antidiphthericum, strontii salicylas*, and *strophanthinum.*

A number of compounds intended to supplant similar preparations, protected by proprietary rights, is found among the new list. One of these, it would seem, scarcely merited this distinction; the one referred to is *Vinum Cocae.* Why any rational practitioner should think of administering cocaine in neurasthenia, in which conditions the proprietary article appears to be mainly given, passes my understanding. The irrationality of the procedure is so manifest that the owners of the proprietary article make the doubtful statement that their product contains no cocaine, in spite of the fact that they claim to use coca leaves in its manufacture.

Quite a large number of crude drugs was dismissed from the official list. A better plan, in my opinion, would have been to have placed them in a secondary list, for many of them are in popular use. By thus placing them upon a quasi official list their identity would have been established and their purity safeguarded. Many of the discarded drugs are of the class known as home remedies, whose use should be encouraged rather than decried, for, while they possess no very active medicinal properties, they are much less harmful than the majority of the modern, advertised proprietary nostrums.

DISCUSSION.

ON PAPERS OF DRS. ROBERTS AND KOENIG.

Dr. R. Max Goepp, Philadelphia: The papers suggest several new thoughts. I do not find that Dr. Jefferis has told us how we are to regain the position as general practitioners which we appear to have lost. Personally, I do not see how the general practitioner can get along without the specialist any more than the specialist can get along without the general practitioner. The surgeon in particular is an absolute necessity to us, and I am confident that the medical man is also in some instances necessary to the surgeon. Some of the most important cases require the coöperation of both branches, and the patient would not be so well taken care of if he did not have the benefit of such coöperation.

I was much interested in Dr. Roberts' insistence on care in the examination of patients in general practice. It is important, also, to remember that our examination should be made with an open mind; for even with the most thorough examination, if the examiner has a preconceived opinion, the correct diagnosis may be missed. I do not believe in snap diagnoses or the diagnostic instinct. Diagnoses are made, if at all, by a full consideration of all the data, and, as a rule, the omission is not in the line of the more difficult and more specialized methods of examination. I believe that the ordinary methods of inspection, palpation, etc., quite as often throw a new light on the case as the most careful laboratory examinations. The surgeon performs his operation and if he does not do anything else, he finds out whether his operation has had any result, and usually what the result has been. Unfortunately, the medical man can not know whether the results he observes are due merely to the curative force of nature or to the drugs he has given. I do not see that we can do anything but keep on trying and not lose faith, and with Dr. Jefferis and Dr. Roberts, I am not an adherent of therapeutic nihilism.

Dr. Judson Daland, Philadelphia: I have but a few words to say regarding specialism in so far as the general practitioner is concerned. No general practitioner can possibly become a specialist in all the departments of medicine, and he therefore finds it necessary, in obscure cases, to seek the advice of one who has devoted himself particularly to that one specialty. The extraordinary increase in our knowledge of medicine has necessitated differentiation on the part of the individual workers and they, in turn, have been able to add much to the sum total of our knowledge. This process is still going on rapidly and in all probability will continue for many years. The great advantage and absolute necessity of specialism in medicine is universally admitted, so that it is scarcely a subject permitting of discussion. Much, however, may be said upon the duties of the specialist not only to the patient but also to the general practitioner and *vice versa*.

Specialism is not peculiar to medicine, but has found a place in all walks of life, and is particularly well developed in commercial, manufacturing, and financial circles, and probably this, more than any other, is largely the reason for the phenomenal success our country has enjoyed during the past decade.

I was very glad to hear Dr. Roberts insist upon the importance of preparedness for emergencies, and the apt and truthful comparison he drew between the plumber and the plumber doctor, where the plumber, after a visit, devotes one and a half hours or more in obtaining the tools that are necessary to make repairs, is most refreshing.

The attempt to represent the names of the new chemicals in the Pharmacopeia is not altogether practical, as has been illustrated by the difficulty experienced by Dr. Koenig, who, although he has already practiced pronouncing these names, repeats them with no inconsiderable difficulty. As exact knowledge of the chemical composition of these drugs increases, it becomes necessary to again change these names which is an additional objection. It would therefore seem best that more simple names should be given for these substances and the chemical names should remain as synonyms.

The need for drugs in general would be greatly diminished if a more exact study was made of diagnosis and the relationship of existing symptoms to etiology. With many drugs no difficulty exists regarding their exact composition, but with some, such as the tincture of strophanthus, the remedy varies, depending upon the source of our supplies. Exact dosage, under these circumstances is extremely difficult. In order to assist the patient to be more accurate in measuring the dose prescribed, more especially in drugs like tincture of strophanthus, the tincture of digitalis or the tincture of nux vomica, during the past five years, more or less uniformly, I have recommended a small ten cubic centimeter graduate which is also subdivided into minims. Mention has been made of prescribing an initial dose of hyoscin hydrobromate, grain 1/50. This I believe to be unwise as certain patients possess an idiosyncrasy regarding this drug by which this dose produces toxic symptoms. The first dose of all potent drugs should be a minimum one, which dose may be cautiously increased each time the remedy is given, until the desired effect is secured.

Dr. John W. Boyce, Pittsburg: I do not think that the general practitioner is such a bad fellow, and I do not believe the public thinks so. In Pittsburg, at least, the general practitioners enjoy a fair share of public esteem, and have an additional recompense in warm personal friendships such as come to no other men merely because of their profession. It is true we do not loom large in the newspapers. And the specialists do receive larger fees. But at its best general practice is well worth doing, and the public knows it.

Dr. Roberts has told us how we shall keep pace with the specialist, viz, by working with such precision and self-confidence as the surgeons show. We shall know what we are doing. We shall get away from this fetish worship of the Pharmacopeia. We shall not concern ourselves about the one hundred and twenty-two new drugs, or the six thousand or more new names. No man in a life time, much less in a year's time, can learn the use of one hundred and twenty-two drugs. We shall select the best and exhaust their possibilities. We shall use only the things that we wish to use, and not have them put up in a great mass of something we know nothing about. When we get down to the few drugs, the alkaloids particularly, and then learn to use those few to bring out the utmost in them, we shall find the general practitioner's work very satisfactory work indeed.

Dr. E. V. Swing, Coatesville: We hear a great deal said about "the passing of the family physician," but I do not feel that the family physician has passed yet. But there is a serious matter that the family physician and all physicians ought to consider, and that is that the subject of applied therapeutics does not seem to have been studied or to have been taught sufficiently in our colleges; so many of our younger practitioners are not able to write prescriptions. One difficulty is that they do not have to—the manufacturers' agents come in and tell them what to do—treat them to a lecture. I am declining their samples. I used to give them away to the poor people but I did not have poor enough to give them to. Tablets are all right in their way, but when a practitioner does not give anything at all, but prescribes these proprietary preparations and tablets, he has no use for prescriptions. What do you think of a practitioner going to a typhoid patient and giving tablets? I learned a lesson some years ago from the case of a patient who had been given some soluble pills. The patient got well but I was surprised to have the nurse tell me that there had been discharged something like half a peck of pills. In a case of enterocolitis or a case in which the stomach is involved, how can they be expected to take up anything like that and be benefited. You have to have fluid medicines and then you have to have a doctor who can write a prescription. I know doctors who hardly ever write a prescription. We ought to have some papers about "the passing of the prescription." Druggists are somewhat interested in that, but they have taken up another phase of the subject because they have become prescribers themselves. Then, too, we are educating the people to this condition of things. They find that listerine and antiphlogistin are good, and say, "What is the use of having a doctor?" I think some of these remedies are good, but I do not use them for everything. I think the general practitioner should begin to think for himself and not be dependent upon tablets. They are all right in their way, but the practitioner should apply remedies without the help of the agents who leave samples and directions for their use. Physicians ought to have a little more self-respect than to depend upon the agents of proprietary remedies.

Dr. John E. Rigg, Wilkinsburg: I belong to the class of general practitioners and expect to continue in that class. There are, however, some things which we regret and which should be remedied, and the remedy lies largely with ourselves. We must wake up in our work. The teaching of therapeutics has been given over too largely to the pharmacist. The colleges are not doing their duty along that line.

While we need specialists and can not get along without them, I believe specialism is being wonderfully abused and will meet its downfall by its own abuse. We all honor and respect a good specialist, but we do not need the class of specialists who so largely fill the field to-day.

With reference to the use of drugs, we must know before we begin what we want to do with them. There are cases in which I would not hesitate to give the drug and the doses spoken of by Dr. Roberts, but there are cases in which they will do harm. Take an incurable case of cancer which has been through your hands and through the hands of the surgeon and has come back again to you without hope of recovery. You are going to give them relief but not going to make them victims of drugs. If you start with a one fourth grain of morphin, which you can safely do as far as life is concerned, how long will it be until you have no relief but will have a victim? If you supply no more than the amount necessary to relieve pain you do not have the habit and give comfort to the patient. It is possible, by watching the physiological effect, to keep a patient on morphin in such a condition for nineteen months and never exceed three eighths of a grain in twenty-four hours. If you know what you want to do with a drug, and do that and nothing more, you have accomplished a great deal.

Dr. Seneca Egbert, Philadelphia: In regard to teaching of the new Pharmacopeia in colleges, it must be remembered that as yet only one graduating class has had a chance to study it, and that, though future students should begin to study it during the second year, the amount of specific information men get concerning the new Pharmacopeia is limited. They have other important subjects to consider in addition to it. They are going to study, or should study, the Pharmacopeia after they get out into practice. I think that I may assert positively from my own observation during the past year that the great majority of our most recent graduates can write prescriptions that any druggist can fill, but they will be prescriptions for simple remedies or ones that have been known for a great many years. This question of how and what to teach from the new Pharmacopeia is a big one. I have my own opinion about the advisability of the changes in the Pharmacopeia, especially in the nomenclature. It is farcical to expect a man to remember the long names we have for such remedies as trional, etc. I challenge the remark that students are not being properly instructed at the present time. There doubtless has been carelessness in the past in some schools, but every body has awakened to the fact that students should know how to administer medicines correctly and how to write prescriptions, and the teaching is being given accordingly. It is well known, too, that students sometimes go back on their teachings after they go out, and the schools should not be blamed for all their shortcomings.

Dr. Roberts, closing: I believe efficiency in medicine depends upon a tripod,—promptness, accuracy, and simplicity.

Dr. Koenig, closing: I have little to say in closing, except that this terrible bugbear—the long technical names—is not as bad as at first thought it appears. There are not a great many drugs of this kind in the Pharmacopeia and if the students are not able to learn the names of these it might be well to extend the course another year. If they are not being taught, and I am sure they are not instructed concerning all the drugs in the Pharmacopeia, they do not get the fundamental principles as they should. I have come in contact with the pick of the best medical colleges in the form of residents in hospitals, and they have shown much ignorance in regard to the Pharmacopeia. In consequence of this lack of training, they fall easy victims to the specious arguments of the agents of manufacturing chemists. These names have a definite chemical meaning. We of the older classes, with the smattering of chemistry we were able to get, are scarcely to be expected to remember these names, but in the classes of to-day so much chemistry should be taught that these names would be thoroughly intelligible to the young graduates. If they are not, I believe the teaching in the schools is defective.

Dr. Jefferis: I want to say a word about the specialists; I claim that they are absolutely essential just as an artillery officer might be to the general in the army, but, as the general in the army ought to be the commanding officer, so, when the general practitioner sends for the specialist, he should not shift the responsibility upon the shoulders of the specialist, but rather retain it so that by his better general knowledge of the condition of the patient, together they may with the more ease and certainty repel the attacking force.

CLEFT PALATE.

BY HENRY R. WHARTON, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

This consists in a congenital defect or cleft in the roof of the mouth resulting from a failure of union of the structures in the middle line which separate the mouth from the nasal cavities. As a result of this deformity there exists free communication between the mouth and nasal cavities. The cleft may involve either the hard or soft palate. The simplest form in which it exists is in a cleft of the uvula or bifid uvula; it may involve a part or the whole of the soft palate and a part of the hard palate, or may pass through the hard palate, stopping at the alveolar border, or may extend through this structure. This deformity, in its most aggravated form, is often associated with double harelip and clefts of the alveolus on one or both sides; in the latter case the intermaxillary bone is often displaced forward and attached to the nasal septum. The cleft generally extends from behind forwards, but in a few cases a cleft of the anterior portion of the palate and alveolus has been observed.

The cleft usually appears in the median line, but cases are frequently seen in which unilateral or bilateral fissures appear to exist. The occurrence of these variations in the deformity can readily be explained when one recalls the development of the roof of the mouth. This is formed by the union of the two palatal processes growing inward from the maxillae, with the ethmovomerine septum growing vertically downward from the frontonasal plate and base of the skull. These processes should be joined together about the tenth week of intrauterine life. When the growth of the palatal processes is arrested, and they do not reach the median line, a median cleft results. If the growth of the ethmovomerine septum is excessive, so that it projects between the edges of the palatal processes, the appearance of a double cleft is produced. A unilateral cleft results when one palatal process unites with the othmovomerine septum, the other process failing to reach the septum; this defect is usually on the left side, and is often associated with cleft of the alveolus and harelip.

Clefts of the palate also vary greatly in their width. Wide clefts are often associated with the presence of an intermaxillary bone. The shape of the roof of the mouth also varies in different cases. In some the palatal segments are horizontal, or nearly so; while in others they are more vertical, forming a highly arched roof to the mouth. Both the width of the cleft and the position of the palatal segments are important factors in the operative treatment of the condition. Wide clefts are more difficult to close than narrow ones and clefts with horizontal segments are not favorable for operative treatment, as the mucoperiosteal flaps are narrower, and greater lateral displacement is required to approximate their edges. In cases in which the segments are more vertical, wider periosteal flaps can be formed, which can be approximated in the median line without much lateral displacement.

Infants suffering from cleft palate can not take the breast and can not swallow satisfactorily, as fluids are regurgitated and escape through the nostrils, and unless most carefully fed are apt to lose weight and die of inanition within a few months. Such cases have to be fed with a spoon or dropper, with the head thrown well backward. They are also liable to suffer from catarrhal inflammation of the nasal mucous membrane, from the free exposure of their surfaces to the air. When there is associated harelip, the risk of infection of the mucous membrane and the lungs, resulting in pneumonia, is increased. I have reason to believe that the mortality in these cases within the first three months is quite large from the above mentioned causes.

When the child begins to speak, articulation is indistinct, certain letters can not be pronounced clearly, and the voice has a peculiar nasal intonation.

Some difference of opinion exists as to the best time to operate upon these cases. Some surgeons recommend that the operation be done within the first three or four months, but in spite of the claims that have been argued for the early operation, I consider that it is attended with much greater risk from hemorrhage and shock, as young subjects bear the loss of blood badly and suffer more severely from shock. In infants the difficulty of the operation is increased by the smallness of the oral cavity, and the prospect of its success is much diminished by the thinness and friability of the tissues making up the flaps employed to close the gap. The results of the operation in infancy, as far as I can ascertain, have been far from satisfactory. Brophy recommends an operation for cleft palate which he practices in infancy, and reports very favorable results following its employment, which will be mentioned later. On the other hand, if the operation is delayed until the child is well grown, although he is in better condition to withstand the operation, and we have better tissues to deal with, bad habits of articulation have been contracted, which may be very difficult to correct even if a successful closure of the defect follows the operation. The age which I consider most favorable for the operation is from the third to the fourth year, and I strongly recommend that it be deferred until this time, as the child is then in good condition to stand the operation. The patient should be in good health when the operation is undertaken; the nasal cavities, tonsil, and pharynx should, as far as possible, be free from acute inflammation. The removal of adenoids and excessively enlarged tonsils, and the relief of nasal catarrh, which is very often present in these cases, should receive attention before the operation for the closure of the cleft in the palate is undertaken. The most skillfully performed operation may result in failure of union if the wound is infected by the discharges from a catarrhal inflammation of the nasal mucous membrane or adenoids.

Therefore I prefer to have the patient under observation for several weeks before the operation, to have the nasal passages and throat treated for the relief of the conditions above described.

It is well to explain to the parents of the child that the results of operation for the closure of clefts of the palate are always uncertain as regards union. In the most carefully executed operation, failure of union of the flaps may occur in a part or in the whole line of the wound. In such cases a second or third operation may often be undertaken with success. We prefer to allow an interval of six months to a year between the operations. The surgeon is often questioned as to what results may follow a successful closure of the cleft of the palate, and can assert that, as the communication between the mouth and nasal cavities is shut off, swallowing will be improved, and the escape of fluids from the nose prevented. The immediate result as to improvement of the articulation and the tone of the voice is not marked, and both may be worse for a time, while the induration of the tissues making up the velum remains, but when this disappears improvement usually occurs. To obtain the best results the patient should have a systematic course of training by a person who is skilled in the treatment of the defects of speech. The operation for the closure of the soft palate alone is known as staphylorrhaphy, and that for the hard palate uranoplasty.

Operation. The patient should be anesthetized. (Some surgeons prefer chloroform in these cases, others ether; I have uniformly employed ether, and have seen no ill effects from its use.) He is then placed upon a firm table, with an attachment which permits the head to drop well backward below the line of the body, or a firm pad should be placed under the shoulders to accomplish the same object. In this position the blood flows downward and collects in the pharynx, is not drawn into the larynx, interfering with respiration, and may be removed by small sponges or pledgets of gauze attached to sponge holders. A mouth gag is placed between the molar teeth on one side of the mouth and the jaws are separated widely; we find a unilateral gag more satisfactory, as it can easily be changed from side to side if required. The tongue may be held out of the mouth by tongue forceps, or by a ligature passed through its tip. It is most essential that a good light be thrown upon the palate; natural light is best, and in a properly lighted room can be secured by a proper position of the head, but if this for any reason is defective, good illumination of the field of operation can be obtained by the use of a head mirror and electric lamp. Sutures of various materials are employed, as silk, silver wire, or silkworm gut; the latter we prefer in approximating the flaps in the hard and soft palate, and use silk or catgut for the uvula. The silk and catgut sutures are secured by tying, silver wire by twisting, and silkworm gut by perforated shot, which are clamped. The sutures may be passed by curved needles and a needleholder, or by a curved handled needle with an eye near the point of the needle; these are made to be used from the right and left. This is the form of needle I prefer in passing the sutures. A hollow needle is sometimes employed for passing the silver wire sutures.

Uranoplasty. As both the soft and hard palate are involved in the majority of cases, this operation is generally employed to close the defect in both structures at the same time. If there is a lateral cleft of the alveolus, or a wide gap present from the removal of the intermaxillary bone at the previous operation for harelip, the closure of this should not be attempted, but the defect in the soft palate and the hard palate should be closed as far forward as possible, and the closure of the remaining defect may be attempted at a later period by a plastic operation, or a rubber palate may be fitted, which closes the gap and serves at the same time for the attachment of any artificial teeth which may be required to complete the dental arch.

Operation. The patient is anesthetized and placed in the position before described, with the mouth held open by means of a mouth gag. The tip of the divided uvula is grasped with toothed forceps, and a narrow-shaped pointed knife is passed through its inner edge and carried upward along the edge of the cleft of its apex, separating a strip of mucous membrane and underlying tissue. The other portion of the uvula is grasped with forceps, and a strip of tissue is separated in the same manner until the incisions come together at the apex of the cleft. This removes the tissue in a continuous strip and insures the complete denudation of the edges. Some surgeons use scissors to accomplish this purpose. The bleeding resulting from these incisions is not very profuse and is easily controlled by pressure. If the tissues covering the hard palate are very thin as they approach the edges of the cleft, as is often the case, their denudation is better postponed until the mucoperiosteal flaps have been separated from the underlying bone, when it will be possible to remove a sufficient amount of tissue from the edges of the flaps to secure flaps of sufficient thickness.

The next step of the operation consists of making an incision down to the bone, opposite the last molar tooth, from one quarter to one half an inch from the alveolus, carried forward at the same distance from the alveolar line to a point a little beyond the line of the anterior edge of the cleft. If the cleft extends through the alveolus, this incision should stop some distance from the edge of the cleft, so as to allow the anterior portion of the flap to have a fairly wide attachment to the alveolar tissues, as its vitality depends upon this connection. A short obtuse-angled periosteal elevator is next passed into the wound, and the mucoperiosteal covering it is separated from the bone beneath through the whole length of the incision. At the posterior part of the incision care should be taken in detaching the flap from the hamular process and back of the bony palate, not to perforate the flap. The same procedure should be practiced in detaching the flap upon the opposite side of the palate. Very profuse bleeding often occurs from the separation of these flaps, and it is usually controlled by the pressure of a sponge or pad of gauze. I have also been able to arrest the bleeding by packing the wounds with strips of gauze saturated in 1:10,000 adrenalin chlorid solution. Approximation of the flaps is next accomplished by the introduction of sutures, but before closing the wound we approximate the divided uvula by one suture of fine catgut or silk passed through its tip, and apply one or two more in the length of the uvula. These sutures act as a basting thread to insure even apposition of the flaccid tissues of the soft palate. Silkworm gut sutures are then passed through the edges of the flaps, beginning at the anterior surface of the cleft and passing towards the uvula. They are introduced by a curved right-handed needle, with its eye near the point, through the flap on the right side, about two or three millimeters from its margins; after passing the needle, its eye is threaded with a strand of silkworm gut, and as it is withdrawn it carries the suture through the flap. A left-handed needle is next passed through the opposite flap at a corresponding point, is threaded, and withdrawn in the same manner. Care should be taken that the sutures are not passed too near the edges of the flaps; if so, they are likely to cut out before union is complete. Sutures are passed in this manner until the flaps are approximated down to the uvula; six to eight sutures are usually required, and after each suture is passed its ends are brought out of the mouth and held together by forceps. The wound is then carefully cleansed of blood clots with a gauze pad or sponge, and the sutures are secured, beginning at the anterior portion of the wound by threading the ends through a perforated shot, and running it down until it comes in contact with the edges of the wound, when slight traction is made upon both ends of the suture to approximate the edges of the wound, and it is secured by clamping the shot with a shot compressor. The same procedure is repeated with each suture until all have been secured, and the suture ends are cut off flush with the clamped shot. If silk sutures have been used they are secured by tying, and wire sutures by twisting. After securing the sutures it will be found that more or less lateral tension exists in the flaps, especially in the region of the hamular process. The relief of this is most essential to the successful union of the flaps. To accomplish this the hamular process is located, and a knife is inserted to its inner side and made to cut upwards to divide the levator palati muscle, which produces a gaping wound. The same procedure is repeated upon the opposite side. The same result may be accomplished by prolonging the incisions of the lateral wounds backward. I prefer, however, the separate incision, as it seems to involve less risk of interfering with the vitality of the flaps. If tension still exists, it may be relieved by snipping, partially, with blunt scissors, the anterior and posterior pillars of the fauces, which contain respectively the palatoglossi and palatopharyngei muscles. Some surgeons recommend making these relaxation incisions before introducing the sutures to approximate the flaps, but as quite free bleeding is apt to result from them, which may delay the remaining steps of the operation, and the localization of the regions of tension becomes clearer after the suturing of the flaps, I have always preferred to make the relaxation incisions in the soft palate after approximating the flaps. I have not often found it necessary to introduce gauze packing into the lateral incisions for drainage, but occasionally have packed them and the relaxation incisions in the soft palate with gauze where bleeding persisted. Mayo favors passing a strip of sterilized tape through the lateral incisions, bringing it over the line of sutures, securing it by tying with a silk ligature over the line of sutures. This secures drainage and gives additional support to the flaps, and after being tied it is shifted so that the knot is buried in the lateral incision; it is allowed to remain about seven days. These lateral incisions heal rapidly by granulation, in spite of their constant exposure to infection. I have never seen general sepsis result after this operation.

After Treatment. The child should be kept in bed and given only liquid diet for the first three or four days, and after this time soft diet may be given with safety. The child should not be allowed to talk. The wounds should be cleansed by spraying with 1:3 solution of peroxid of hydrogen, followed by a mild antiseptic spray of Dobell's solution or boric acid, repeated at intervals of three or four hours. Plugging of the nares has been advocated by some surgeons, to cause the patient to breathe through the mouth and thus cause drying of the edges of the wound, to prevent maceration and infection, but the utility of this procedure does not appeal to me. The patient is allowed to be out of bed at the end of the first week. A certain number of the sutures becomes loose and are spit out or swallowed. Sutures remaining *in situ* should be removed at the end of two weeks.

Small gaps in the line of union are sometimes seen, but these usually close in a few days by granulation. If failure of union in a considerable portion of the wound occurs, the patient should not again be operated upon for six months or a year.

Staphylorrhaphy. This operation is employed when the cleft occupies a portion or the whole length of the soft palate. The patient is anesthetized and placed in the position above described. The tip of the divided uvula is then grasped with toothed forceps, and a narrow, sharp-pointed knife is inserted into the uvula and carried upward to the apex of the cleft, removing a strip of mucous membrane and underlying tissue. The same procedure is repeated upon the opposite side of the cleft, the incision being carried from below upward until it joins the one previously made, and the separated strip of tissue is removed in one piece. Bleeding is usually at first profuse, but is controlled by pressure with a sponge. Usually I first approximate the edges of the uvula by one or two sutures of catgut or fine silk, as previously described in the operation of uranoplasty. The edges of the soft palate are next approximated by sutures. The first suture is placed at the apex of the cleft, and succeeding sutures introduced through the uvula. The number of sutures required depends upon the length of the cleft, four or five usually being required to approximate the edges of the wound. We prefer silkworm gut sutures, and when a sufficient number has been introduced, the edges of the cleft are approximated by tightening and clamping them with perforated shot. Relaxation incisions are next made, as previously described, and the after-treatment of the case is similar to that employed in uranoplasty.

Mechanical Treatment. Some physicians recommend that all cases of cleft palate be treated by the use of rubber obturator or plate, which closes the opening in the hard palate, claiming that the risk of operation is thus avoided, and that better results as regards the tone of the voice and articulation are obtained. Some also claim that the articulation and voice are nearer normal than in cases in which the cleft has been completely closed by operation. A septum of living tissue between the mouth and nose is greatly preferable to one of rubber, which, unless carefully cleansed, is apt to become offensive; they are complicated and difficult to keep in order, and in my judgment the results of operation are infinitely superior. The risk of the operation is not great, as far as my personal experience goes. I have never seen a case very ill as the result of the operation, or one terminate fatally. Occasionally a case is seen in which the gap is so wide that there is not sufficient tissue present to close it, or in cases where repeated operations have been followed by failure; here we recommend the use of the obturator, or mechanical septum, and I have seen excellent results as regards improvement in the voice and articulation. The obturator consists of a metal or rubber plate, fitted over the cleft, and attached to the teeth or held in place by suction; to this is often attached posteriorly an artificial velum of rubber or metal, which rests upon the segments of the soft palate and is moved by them. If there is a gap in the alveolus the plate may be utilized to fill this, and have attached any teeth which are missing. Care should be exercised in fitting the plate that it does not fit the cleft so tightly that it causes ulceration of the soft tissues, or interferes with the growth of the bone and soft tissues, which later may produce a diminution in the width of the cleft.

Operation in Infancy and Early Childhood. Although the consensus of surgical opinion is opposed to operation for cleft palate in infants and young children, it is advocated and practiced by some surgeons, notably by Wolff of Berlin, who recommends operation in children one and two years of age, and Dr. D. W. Brophy of Chicago. The latter strongly advises that the operation be done in infancy, if possible, from two weeks to three months of age. He claims to have operated upon two hundred and eleven cases of cleft palate under six months of age without a death. He states that the results, as regards the development of the muscles of the palate, growth of the bony structure of the palate and jaws, and eruption of the teeth, were superior to those following the generally accepted operation. Although I have had no personal experience with the operation recommended by Brophy, which differs so radically from the one usually employed, I feel that a brief description of the procedure will be of interest. Brophy advocates the operation in infancy for the following reasons: That surgical shock is less because the nervous system is not well developed; that infants react better and do not suffer from mental apprehension; that the bones contain so much organic matter that they can be bent without fracture; that the muscles of the velum are brought into action and perform their normal functions, which is not possible when a cleft is present; that when the palatal processes of the maxillae are united the bones of the alveolar process of the upper jaw assume their normal form, and the teeth when erupted will properly occlude with those of the lower jaw; that all the tissues, both bony and soft, develop naturally, and there is much less deformity; that when the parts have developed sufficiently, normal speech is possible, which is unlikely if faulty habits have been acquired before the closure of the cleft is accomplished. He advises that if the cleft of the palate is associated with single or double harelip, no operation be done to repair this defect until after the palatal cleft has been closed. He also recommends in cases in which the intermaxillary bone projects, that it be pushed back into line with the alveolar arch; if this is impossible, a V-shaped section of the inner should be removed to accomplish this object.

The child is anesthetized with chloroform, and a specially devised oral speculum is introduced. The edges of the cleft are next freshened with a knife by removing a portion of the bone of the palate with the soft tissue, and the alveolar cleft, if present, is freshened in the same manner. The bone is so soft that it can be easily cut with the knife. The cheek is next raised, and a strong, slightly curved, handled needle, with an eye near the point, is threaded with stout silk and passed through the superior maxillary bone behind the malar process, high enough to be above the bony palate, and is made to emerge at the central fissure, where the loop of silk is held and the needle withdrawn. The procedure is repeated at a corresponding point on the opposite maxillary bone, and one loop is passed through the other, and a single loop is then drawn through both maxillary bones. A second loop of silk is passed through both maxillary bones near the anterior portion. Heavy silver wires, No. 20, either single or double, are fastened to the loop of silk and drawn through the bones. Lead plates are fitted to the convexity of the buccal surface of the maxillary bones, and the projection ends of the wires are passed through the perforations. The right end of the anterior wire is secured by twisting it to the right end of the posterior wire, and the wires upon the left side are secured in the same manner. By twisting the wires the soft bones are forced together and the edges of the cleft approximated. If the cleft is very wide and its edges can not be approximated by twisting, pressure with the thumbs on each side, or by forceps, may be employed. If this fails to approximate the edges of the cleft, raise the cheek and divide the mucous membrane and the bone through the malar process, making the incision in the bone more extensive than in the mucous membrane; the same procedure is repeated upon the opposite side. The wire sutures are again twisted, and it will usually be found that the edges of the cleft can be approximated without difficulty. Hemorrhage from the section of the mucous membrane and bone is not usually free, and can be controlled by the pressure of a sponge or gauze pads. The palate is next dried with a sponge. The line of junction is next examined, and a few sutures of silk may be introduced to insure accurate approximation of the edges of the soft tissues of the cleft. No incisions through the soft palate for the relief of tension are required, which, according to Brophy, are always followed by interference with the function of the velum.

The after treatment consists in keeping the mouth and nose clean by mild antiseptic sprays. The child should not be allowed to take the nipple, but should be fed with a spoon. The lead plate and sutures are allowed to remain from two to four weeks.

DISCUSSION.

Dr. John H. Gibbon, Philadelphia: I have been very much interested in Dr. Wharton's paper. There is one point in the treatment of cleft palate which I think is very important, and that is the manipulation of the bones in early infancy. I have had three cases in the last year, or two that have impressed me very forcibly with the benefit to be derived from the simple compression of the two maxillæ. If this is carried out conscientiously and faithfully by the mother, the cleft in the hard palate, can be greatly narrowed, and in some instances entirely obliterated. The treatment should be begun within the first week or two of life. At this early period, the bones are very soft and can be easily moulded into position. This, of course, is on the principle of the Brophy operation, which consists in the forcible approximation of the bones. In one case of double harelip and complete cleft of the palate after operating on the lip and removing the intermaxillary bone, one half of the hard palate united under daily compression by the mother, and in this case the manipulations of the bones were not begun until the child was seven months of age. The compression can be made by passing the forefinger and thumb into the mouth and making pressure on each alveolus, or it can be made from the outside. Excellent results are obtained every day in the treatment of club foot in early infancy by manipulation, and there is no reason why we should not greatly improve and sometimes cure the cleft of the hard palate by this method. Of course, the operation on the soft palate is later required.

As to the time of operation, I think that manipulation should first be given a fair trial, say for six or eight months or a year, and then the closure of the cleft completed by one of the operative methods. The operation certainly should be done before the child begins to talk. A great advantage of the early operation is that the sooner the cleft is closed the better will be the development of the accessory nasal sinuses, and I think also that the development of adenoids will be greatly lessened by early operation.

Dr. John B. Roberts, Philadelphia: I have recently changed my opinion in regard to cases of cleft palate. I did believe, as Dr. Wharton has so clearly stated, that we should not operate early. My belief now is that the time to begin is the time when the child is born. The operation of Brophy by wire sutures carried across the jaw by a long needle is a good one in very young infants. Moulding or pressing the halves of the upper jaw together with the fingers may be employed for a few days until

Brophy's operation is arranged for. You would be very much surprised, I think, to see how little shock is caused in a very young child by the introduction of Brophy's sutures. In older children Lane's method of making the flaps is best. The way to make the child talk properly is to properly develop the parts early by proper closure of the cleft, so that the nasopharynx may be developed.

Dr. G. Hudson-Makuen, Philadelphia: I have had the pleasure of seeing many of Dr. Wharton's patients after operation on account of their defective speech, and have been so pleased with the results that I regret, as I am sure you do, that he did not have time to finish his paper. I regret also that Dr. Wharton has found it advisable to postpone the operation for cleft palate until the child is three or four years old because of the injurious effect that the delay must necessarily have upon the speech.

The development of speech in the normal child begins soon after its birth, and the first few years are the most important ones. Any structural irregularity of the organs existing during this time makes the development of good speech impossible, and hence the desirability, other things being equal, of the early operation.

Perhaps I overestimate the importance of the element of speech in these cases, but I always feel that it is the principle thing to be considered, and that it is even more important than the hygienic value of a roof to the mouth, separating it from the nasal cavity.

When the operation is deferred as Dr. Wharton has intimated, the peculiarity of speech appears, at first, to be greater after the operation than it was before, and in my experience it not only appears greater but it actually is greater, on account of the sudden change in the anatomic relations of the various parts of the palate. It takes a little time for the patient to accustom himself to the new condition.

Another point to be considered is the fact that the speech would remain much the same even if the surgeon were able to give a perfectly normal mouth and palate, because the child has acquired during preceding years faulty conceptions of his speech sounds. No child ever hears speech accurately until he has learned to use it accurately. It must be remembered that speech is of cerebral origin, and that the peripheral organs are merely the tools of the cerebral centers in the production of speech. The closure of the cleft palate, therefore, merely gives the patient better working instruments for the purpose of speech.

As Dr. Roberts has said, the defect of the speech is not altogether due to the shape of the mouth or palate, but it is due largely to a faulty conception of speech existing in the cerebral centers. If a child has gone three or four years with a characteristic cleft palate speech, he has in that time developed similarly defective mental concepts of speech, and they can never be entirely corrected without a long course of training.

I was interested in what Dr. Gibbon said with reference to manipulation of the palate before operation, and this suggested to me the importance of manipulation and massage of the parts after operation. As soon as the parts have become thoroughly united, persistent massage, given under proper direction by the patient himself, will serve to give a more flexible velum, and a more effective one for purposes of speech. I have also found it helpful to teach the patient to use the muscles of the palate as much as possible under direct control of the will. By careful practice it is surprising how much voluntary control of the palatal muscles may be acquired.

Dr. T. Turner Thomas, Philadelphia: I had under observation about three or four months ago a case with relation to this subject which was very interesting to me. I operated for club foot on a boy about eight or ten years of age, and I noticed that he had a defect of his speech which suggested the presence of a cleft palate. I examined the roof of his mouth but did not find anything of the kind at first. The roof was complete and apparently perfect. The more I heard him talk, the more I thought there must be some discoverable cause for the defect in speech. On taking him to a good light and watching the roof of the mouth carefully for a little while, I observed that in making certain sounds, the mucous membrane retracted in the median line, showing a cleft in the bone, running forward to, perhaps, half an inch or an inch of the incisor teeth. The bony cleft was filled in with soft tissues. The absence of the bony portion of the roof of the mouth evidently was accountable for the defect in speech, and suggested the possibility of a similar cause for the same interference, which is so common after operation for the closure of cleft palates.

Dr. Wharton, closing: I was glad to hear Dr. Gibbons, Dr. Roberts and Dr. Thomas call attention to the early operation. I mentioned in my paper Brophy's operation, which has attracted considerable attention. The operation, according to his statements, is not a serious one. He reports, I think, some two hundred and eleven cases, with a very slight mortality. I confess that I have always felt that an operation as serious as one for cleft palate would be very poorly withstood by a child a few days or a few weeks or even a few months of age.

As regards the improvement in speech, I think Dr. Makuen is perfectly correct, the earlier the operation is done, the better the chances are of getting good speech results. My experience has been with the cases operated on at the age of three or four years, that, if they are properly trained (that is, placed in the hands of an expert), the results are very satisfactory. I believe the most satisfactory results as regards speech are from some of the mechanical appliances. I believe that some of these patients learn to speak normally. I think there are several disadvantages in wearing these mechanical appliances as they become foul if not properly cared for, and in children, they will require constant changing, as the size and shape of the mouth changes.

There is one point I especially desire to call attention to that is, I believe, of very much importance, and one that I think is too often overlooked. I have had cases do well for the first three or four days, and then the whole line of union break down. In these cases, we generally find that the child has had some chronic nasal catarrh, or adenoids, and infection of the wound occurred from these sources. With this end in view, I have always inclined to have the child take some preliminary treatment, have the adenoids removed, and certainly have the mucous membrane of the throat treated for a few days, to render it sterile, as far as possible.

PHOTOGRAPHIC ILLUSTRATIONS IN MODERN MEDICAL AND SURGICAL LITERATURE.

CHRISTIAN B. LONGENECKER, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

From the earliest times pictures have been used to convey ideas. They have always played an important part in every language, from the savage to the civilized. They were a mode of expression and a method of exchange of ideas, being, in early history, the whole written language of a people.

Pictures, at first crude, have gradually developed into accuracy. Made by hand, they were necessarily more or less crude. Made by the camera in later years, they have become things of accuracy, so that at present the method of illustrating books by means of photography has reached a high degree of excellence; and the photographs in many of our recent books are truly works of art and skill. So true is this that many a book is sold on the merits of its photographic illustrations, to which every attention is given by the author and the publisher; and probably the best selling books are those that are the best and most carefully illustrated.

But when we inspect the medical journals we find the same does not apply. We are here impressed with the fact that many very able articles are illustrated by very inferior photographs. This, in fact, seems the rule rather than the exception. Here any photograph, no matter how poor, is used. In books the illustrations are closely looked after. In the journals they are left to the author of each paper. The consequence is that, every physician thinking himself a photographer, illustrations of varying degrees of poorness accompany the article. It is unreasonable to expect all physicians to be able to take good photographs. Writers are not necessarily photographers, and thus many a good article is spoiled to an extent by introducing a photograph which shows nothing. At rare intervals a poor photograph is the only one available. Possibly the patient has died, or has passed from observation, or the condition once interesting has ceased to exist, and the condition can not be rephotographed. In such a case it may be excusable to accept it. But in the vast majority of cases good pictures can be obtained if correct methods are used.

A photograph will always lose something in sharpness and clearness by reproduction, the amount depending on whether it is printed on soft or on plate paper. It is of the greatest moment, therefore, that the original should be first class, sharp, well focused, and clear: then a little falling off in the reproduction will not be noticed. A good photograph can be reproduced on any kind of paper with good results—it being understood that the better the paper the better the result. But a poor photograph can not be reproduced well on any kind of paper, and it only becomes still worse. There is no printing process that will improve a poor photograph. And, when this same photograph reaches the stage of the reprint it is often worse than useless. Advertisers usually get what they want by making a good start with a good photograph. Physicians should take a hint from this fact; and those who can not do this work satisfactorily themselves should turn it over to a photographer who possesses the requisite skill, and one who will adapt his methods to the results desired. But patients are often hard to get to the professional photographer on account of modesty or some other reason. In those cases the physician must often do the work himself to the best of his ability.

Particular stress must be laid on the fact that good work can not be done with poor tools. Good photographs can not be made by putting the patient in any convenient corner and snapping him with a cheap camera. In this way most of the poor photographs are produced. He who would make a good photograph must study his light and shade as well as his subject. Too much light is as bad as too little. Some subjects require front lighting, while others require very oblique effects. The light should be so arranged in regard to the subject (or the subject to the light) as to produce the best effect, and the effect that is desired in each particular subject. It is manifest, then, that the control of the light is the first requisite. A large side window or a corner of a balcony, assisted by either side reflectors or screens, to either illuminate the shades or increase the shadows, as may be desired, is of the greatest importance; and unless we can get this we need not expect good results. This light can usually be arranged in any physician's house by the side of a good-sized window, preferably one looking toward the north. This light is more even, as direct sunlight gives shadows that are entirely too abrupt for the best effect. Soft shadows, well controlled, give the best effects.

A good camera is indispensable; one with a fixed focus has no place in this outfit. A camera must have a focusing arrangement and a ground glass for focusing. A rear-focusing arrangement is much to be preferred over a front-focusing one, as, when an object is being photographed nearly its original size, any movement of the lens disturbs all the relations between the object and the ground glass, and it is often very difficult or even impossible to get a satisfactory focus by moving the lens. But when the ground glass is moved, and the lens remains fixed in relation to the object, the focusing becomes much simplified. The usual movements to be found in a good camera—rising front and swing-back—are desired for convenience in arranging the subject. A good lens must be insisted on. It should be a rectilinear, as there is too much distortion with the single lens. It need not be one of the modern high-priced ones, as a small or a medium-sized stop is used for most work. A long-focus lens is much better for close work than a short-focus, as the latter distorts the nearer portions of the subject too much. For instance, a hand or a foot being closer than the body, will be shown much too large. A long-focus lens, being further removed, will give a truer perspective.

A tripod or an adjustible stand should be used. Very seldom can satisfactory pictures be made by holding the camera in the hand, on account of the length of exposure. The stand is better than the tripod, as a tripod is liable to slip on a floor, and is harder to adjust in relation to the patient.

A light or a dark background should be used, as best suits the subject. The background should be large enough to entirely cover the plate, as a portion of a chair or a bed or a building forming a portion of a background does not give the best effect.

As to development—we here reach a stage at which the work can safely be turned over to a photographer, who can develop the plate and print the picture. But the person who develops his own plates, being acquainted with the subject photographed, can usually get results more to his taste than when this work is given to another. However, to be able to do this correctly demands sufficient familiarity with the technic of this portion of photography. Every one has his own favorite brand of plate and developer, so that nothing especial need be recommended, except that it is wise to become acquainted with one particular brand of plate and one formula of developer which works well with this plate, and get the most from these, rather than fly from one brand to another, and thus always feel uncertain as to results.

In conclusion it should be said that this paper is presented not to find fault needlessly, but to demonstrate that the fault does exist to a large extent; and, realizing that the standard of this work is low, it is the hope that general improvement may follow in journal illustration, not only in the quality of the photograph, but also in its reproduction by the publishers, that has suggested the reading of this paper.

THE OPPENHEIMER INSTITUTE.

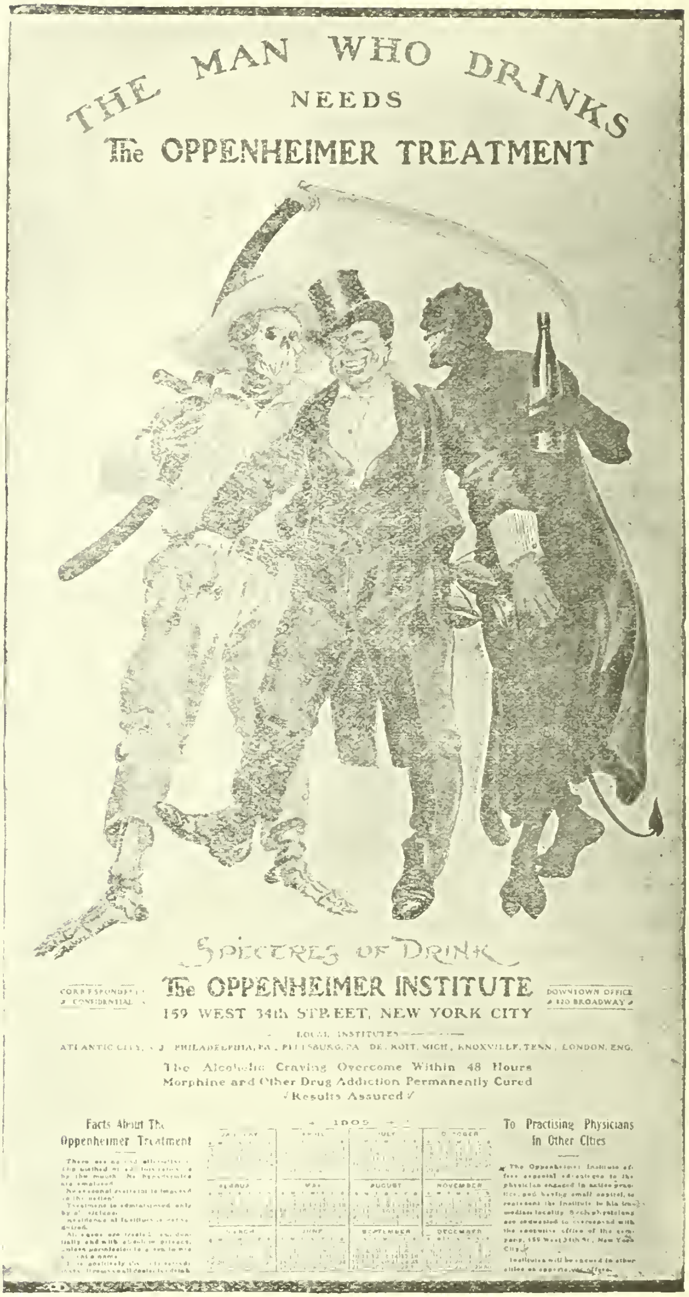
Of "institutions" for the regeneration of drunkards there are many. Some of them are entirely reputable, but these do not make blanket promises of cure. The famous "Keeley Cure," which formerly made the most extravagant claims, is now conducted on a much sounder basis, and actually produces results in a certain percentage of cases, though its former claim of more than eighty per cent. cured and less than twenty per cent. lost would be much nearer the truth if reversed. As the Keeley institutes do not now, so far as I can judge, promise to cure all forms of drunkenness, nor attempt to take pay for cases which they know to be incurable, I do not include them in the swindling category. This is precisely what the Oppenheimer Institute, a vast and ambitiously organized stock-jobbing drink cure, does do. Two years ago Mr. Samuel L. Clemens (Mark Twain) sent a servant to the institute's headquarters in New York City to be cured of alcoholism, paying $150 for the treatment. Within two weeks after the "cure" was completed, the man appeared at the house, maudlin drunk. Mr. Clemens, like most people, dislikes to be buncoed. Unlike most Americans, he is willing to take some trouble on his own account to make trouble for the buncoer. He called upon Dr. Isaac Oppenheimer for an explanation.

"Oh," said Dr. Oppenheimer, "your man is a dipsomaniac; we can't cure dipsomania."

It further appeared that all the Oppenheimer treatment could do was to remove the craving temporarily and cure the patient, "if he obeys orders." The orders are, of course, to stop drinking. There's a beautiful simplicity about this scheme. Anybody can work it. You promise, in print, to cure alcoholism. You tell your patient that you will cure him *if* he follows directions. The directions are to leave liquor alone permanently. Later, when he finds he can't do this, you tell him it isn't your fault, because he deliberately chose to go back to his vice. Meantime, you've got his money.

This sort of practice didn't appeal to Mr. Clemens. He wrote to Dr. Oppenheimer inviting him to put his business on a basis of common honesty, by stating in his advertisements that the Oppenheimer Treatment can not cure dipsomania and that "the institute itself effects only temporary cures: the patient must do the rest himself if the cure is to be permanent." This has never been done. The Oppenheimer advertisements are to-day what they always have been, essentially dishonest. Therefore the treatment is based upon misrepresentation and fraud, and the whole concern is an example of high-class, skillfully devised and conducted quackery. This I state with the full appreciation that there is some merit in the process, which is a graduated dosage of a secret drug; enough merit to have established it as a reputable treatment. The more shame to those who, in their greed, have degraded it to the level of charlatanry. I have myself known of cures effected by the institute. I have known of failures to cure. One friend of mine was saved from drug habit, but at the cost of permanent derangement of an important physical function. Two acquaintances who took the treatment died within a few weeks after leaving the place, and I know of two other similar cases, but whether the powerful drugs administered were responsible no man can say.

In the articles of this series I have frequently commented on the carelessness with which honorable names are lent to dishonorable enterprises. The case of the Oppenheimer Institute exhibits this phenomenon, in a *reductio ad absurdum*. The man who gets the "names" for the firm ranks with the Peruna testimonial expert. How he persuaded the men of prominence to his purposes is beyond the limits of my imagination, but there they are, represented on the "Board of Advisory Directors." The sole use of this board is for advertising purposes. It directs nothing. It advises nothing. It never, so far as I can discover, held a meeting. There is a list of active directors, too, including James H. Alexander, José Aymar, Irving Bacheller, Charles R. Brown, Leroy H. Baldwin, and Frank A. Vanderlip, but as they have supposedly been getting money for their services, they can hardly be classed as wholly dupes. The Advisory Board has been a most changeable body. Resignations have been frequent, the members discovering in one way or another the shady nature of the enterprise of which they were an asset. One presumable permanency is Bishop Fowler of the Methodist Church, whose son is the active manager of the scheme. The pretense of being a great and worthy institution for the regeneration of drunkards was used as bait for other clerical gentlemen. Bishop Henry C. Potter, Rev. Dr. Charles H. Parkhurst, Rev. Floyd Tomkins, Rev. Robert Collyer, Rev. Dr. J. D. Kennedy, and Rev. P. L. Henson are some of those who went into the scheme and later withdrew, their places being readily filled. From the secular ranks there is a long list of those who got their fingers burnt pulling other people's chestnuts out of the fire. How they got into so unremunerative a partnership isn't very adequately explained by their own accounts, written to Mr. Clemens, who undertook to find out from them whether they really knew anything of the enterprise which they backed with their reputations. Most of them seem to have "gone it blind." Secretary of the Treasury Shaw knew "nothing about the Oppenheimer Institute, except that it was very well endorsed by me." Mr. Wagnalls of Funk & Wagnalls had "no personal knowledge of beneficial results or otherwise." Admiral Dewey had "no personal knowledge." Neither had the Rev. Floyd Tomkins, or the Rev. P. L. Henson, or Charles Emory Smith. Senator Knute Nelson let his name go on the list "to oblige a clerical friend," and withdrew it in chagrin and anger when he found that he was being used "as a wooden Indian in front of a cigar store." Rev. Russell H. Conwell knew nothing of the concern, but apparently gave his name to some friends to play with, and they loaned it to the Oppenheimer outfit. (The explanations in these two cases were given, not to Mr. Clemens, but to others.) President Reed of Dickinson College had "no direct knowledge of the methods" but did know one man who underwent the treatment and "did not live long after his emancipation." Mayor Weaver knew "one or two men" who took the "cure" and were worse off after it than before. President Chase of the Hartford Life Insurance Co. sent a patient there, and found out enough to lead him to withdraw his name. Ex-Senator Stone of Pennsylvania lent his name "to oblige a clergyman friend." Complaisance seems to have been a leading characteristic of nearly all these gentlemen. Bishop Potter's name is still used in the advertising, although he has attempted to withdraw it. Nearly all of the others have withdrawn. Is simple withdrawal enough? What Mr. Clemens thinks on this point is stated with characteristic exactitude in a letter to me, which I venture to recommend to the attention of such men of prominence—and there are scores of them—who respect their names less than they respect themselves:



THE MAN WHO DRINKS
NEEDS
The OPPENHEIMER TREATMENT

Spectres of Drink

CORRESPONDENCE CONFIDENTIAL

The OPPENHEIMER INSTITUTE
159 WEST 34th STREET, NEW YORK CITY

DOWNTOWN OFFICE 120 BROADWAY

LOCAL INSTITUTES
ATLANTIC CITY, N. J. PHILADELPHIA, PA., PITTSBURG, PA. DETROIT, MICH., KNOXVILLE, TENN., LONDON, ENG.

The Alcoholic Craving Overcome Within 48 Hours
Morphine and Other Drug Addiction Permanently Cured
Results Assured

Facts About The Oppenheimer Treatment

1905

To Practising Physicians In Other Cities

This dainty advertisement decorated the New York bill boards to the dismay of the cure's clerical endorsers.

(Reproduced by permission of *Collier's Weekly*.)

"*Dear Adams*:—I think that the majority of the illustrious men whom I questioned by mail as to their reasons for recommending Oppenheimer's policyshop, exhibited themselves as astonishingly careless and dangerous citizens in their replies. They knew that the public believed in them and trusted them, and they were treacherous to that trust, and shamed it. You say that when they discovered how they were being used, they withdrew their names. *In silence*. Do you think that that was sufficient? It does not seem so to me. I think that until they repent publicly over their damaged names, the country ought to be as ashamed of them as you will see by their letters that they are privately ashamed of themselves. It is certainly laughable—and also pathetic—to see grown-up men act as these illustrious children have acted. Sincerely yours, "MARK TWAIN."

When the Oppenheimer Institute had secured its endorsements it proceeded in regular patent-medicine-quack fashion to coin them into money. It established agencies on a split-fee arrangement with physicians (physicians in good standing are not supposed to split fees); it got out its blatant advertising, such as the accompanying cut (using Satan as a suitable balance wheel, presumably, to its clerical list); it put on the market a patent medicine called the Oppenheimer Tonic, supposed to give all the stimulus of "booze" without its harmful effects, and, finally, it proceeded to inflate itself in approved high-finance style, and offer its stock to an unsuspecting public, on a capitalization of $3,600,000. What was it capitalizing at these substantial figures? Bishop Fowler, Bishop Potter, Admiral Dewey, Secretary Shaw, *et al.* Certainly it had no other assets which could possibly justify such wind-swollen figures, even under the bellows of that pneumatic financier, Charles R. Brown, its vice-president. I have never heard that the public rushed to buy. People are more suspicious of financial than of medical quackery. Still, quite a number of small purchasers were "stuck," and some of them wrote letters to the Advisory Directors, whose names had lured them, that made very painful reading. To cap the climax the concern succeeded in introducing in the New York Legislature one of the most shameless graft bills ever devised; a bill whereby on second conviction for intoxication the prisoner might be committed to the Oppenheimer Institute, at the expense of the state! The bill failed, but its sponsors are hopeful. The Oppenheimer Institute is still continuing its quackery, still selling its patent medicine, and still exploiting such names as it has succeeded in holding. In time, when it moderates its claims to some accordance with the facts, it may become a reputable and useful treatment. As now conducted it is an unsavory combination of financial chicanery and medical charlatanism, and will be as long as the present management controls.—Samuel Hopkins Adams, *Collier's Weekly*, September 22, 1906.

MASSACHUSETTS ADMITS THE HOMEOPATHS.

At the one hundred and twenty-fifth annual meeting of the Massachusetts Medical Society, held at Boston June 12 and 13, the question of amending the by-laws relating to membership in the society provoked an animated discussion. For thirty years or more the society had forbidden its members to practice "spiritualism, homeopathy, allopathy, Thomsonianism, eclecticism or any other irregular or exclusive system, generally recognized as such by the profession, or declared so by the councilors of the society." Practically homeopaths formed a class chiefly under discussion, and a committee, of which Dr. F. C. Shattuck of Boston, was chairman, after calling attention to the demise of some of the other sects, presented an amendment allowing, under strict educational qualifications, one to become a member, provided he "does not profess to treat diseases by, or does not intend to practice any exclusive system, generally recognized as such by the profession, or declared so by the councilors of the society." After considerable discussion, the amendment was adopted.—*Councilor's Bulletin of the American Medical Association.*

BILL UNCOLLECTABLE.

Dr. Gorem—Oh, yes, my boy, I have fought for my country.

Boy—Weren't you scared, pa?

Dr. Gorem—Scared? I guess you would not have thought so if you had seen me charge the enemy.

Boy—You charged 'em all right, I bet, but you couldn't make 'em pay, could you?—Tit-Bits.

STRONG REMINDER.

Eva—Freddy Charring says he came from London. Do you see anything that reminds you of London about him?

Ethel—Yes; even his mind is foggy.—Chicago News.

The Pennsylvania Medical Journal.

PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

CYRUS LEE STEVENS, M. D., Editor and Publisher.

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All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

ATHENS, NOVEMBER, 1906.

Some hae meat that canna eat,
And some would eat that want it;
But we hae meat, and we can eat,
'Sae let the Lord be thankit.—Burns.

I confess my obligations to the forefathers of New England, and offer to them the homage of a grateful heart. But not in thanksgiving only would I celebrate their memory. I would if I could make their example a universal lesson, and stamp it upon the land. The conscience which directed them should be the guide for our public councils. The just and equal laws which they required should be ordained by us, and the hospitality to truth which was their rule should be ours. Nor would I forget their courage and steadfastness. Had they turned back or wavered, I know not what would have been the record of this continent. Charles Sumner.

THE WEIGHTS OF THE VISCERA IN INFANCY AND CHILDHOOD.

A knowledge of the normal weights of the viscera at different times of life is often desirable. The existing data on the subject are not altogether satisfactory, and any effort to bring order out of the chaos in this field can not be too warmly commended. With the view of establishing definite standards for the weights of the viscera in infancy and childhood, Drs. D. Bovaird and Matthias Nicoll, Jr., (*Archives of Pediatrics*, September, 1906, p. 641) studied the organs from five hundred and ninety-one bodies submitted to autopsy at the New York Foundling Hospital during a period of three years. The length of the child, and not its weight, was made the basis of comparison, as the former was thought to be the factor, next to age, most closely related to the development of the different organs of the body. An elaborate series of tables was prepared, and the detailed results can not be reproduced here on account of limitations of space. It was found that in infants and children up to the age of five years there is a constant relation between the weights of the more important viscera, as follows: The weight of the heart averages one seventh that of the liver; the weight of the spleen one tenth that of the liver; and the weight of the kidney one ninth that of the liver. It was found that the weight of the thymus gland as commonly given is excessive, the average weight of the normal viscus being approximately six grams. There was no evidence of growth of the thymus after birth under ordinary conditions, although under special conditions the gland does increase in size and at times even undergoes enormous hypertrophy. E.

THE CARDIOVASCULAR COMPLICATIONS OF CHOREA.

So frequent is the association of chorea and rheumatism that the former is commonly designated a nervous complication of the latter. Rheumatism is in all probability an infectious disease, and chorea is likewise so with almost equal probability. It is not surprising therefore that the latter should frequently be complicated by endocarditis and valvular disease of the heart. To the abundance of evidence in support of this association that already exists additional data are furnished by Dr. W. S. Thayer (*Journal of the American Medical Association*, October 27, 1906, p. 1352) as the result of an analysis of 689 cases of chorea observed in the Johns Hopkins Hospital and Dispensary. Indications of cardiac involvement were found in 25.4 per cent. of the cases and they were more common when a history of acute polyarthritis could be obtained than when such a history was wanting. They were likewise more common in cases with frequent recurrence than following a single attack. Fever of moderate degree was present in almost all of 110 cases of chorea treated in the hospital. Indications of cardiac involvement were present in the large majority of cases attended with high fever. From a study of the evidence the conclusion is reached that the presence of fever in the course of an otherwise uncomplicated attack of chorea is in a large proportion of cases associated with complicating endocarditis. E.

THE GREAT AMERICAN FRAUD.

Mr. Samuel Hopkins Adams in *Collier's* for September 22 pays his respects to some of the individuals and firms that trade on the weaknesses of human nature, appropriately heading his article, "The Scavengers." We quote the closing paragraphs:

"With this article ends my series on the Great American Fraud. This does not mean that *Collier's* will have lost its interest in the fraudulent medical business. From time to time its respects will be paid to such new forms of quackery as crop up. But this series, as a series, is closed, and there is a word of valedictory to be said. The articles have touched but the fringe of the evil. For every medical fraud that I have described there are hundreds less conspicuous, which have escaped me. For every instance of death or ruin, set down to the account of secret remedies, there are scores which have not come to light. Such accusations as have been made in these articles have been explicit. There has been no attempt to hide behind generalities. The objects of my attacks will themselves admit this. Whether the accusation lay against an individual or a firm, it has been specific. I have purposely used ugly words, such as thievery, rascality, dishonesty, pandering, swindling, murder. I have used them to give those to whom they are applied unimpeachable material for legal proceedings if I was in error. Thus far, one libel suit, and only one, has been brought, and that apparently based upon alleged inaccuracy in describing the ingredients of a nostrum. Many details of facts stated in the articles have appeared in organs controlled by the

Proprietary Association of America, such as the quackish *'St. Louis Medical and Surgical Journal.'* They are tissues of lies, patched up by methods of investigation which would shame a 'cub' reporter on a country newspaper. Certain patent medicine firms have endeavored to spread the impression that *Collier's* has retracted a number of statements made in this series. The highly skilled professional liars employed by the Liquozone Company have embodied this charge in their letters. It is absolutely without foundation. No retraction has been made of any statement, charge, or opinion expressed in any article of the Great American Fraud series. When error is shown, retraction will be made. Not before.

"So far as they have any purpose, beyond public enlightenment on a subject of widespread importance, the articles express the need for wise, restrictive patent medicine legislation. The Pure Food bill embodies such legislation, relating to interstate commerce. Many states are considering the subject with a strong probability that internal state commerce will be similarly or more stringently regulated. There is sound expectation that eventually universal laws will be enforced in this country as in New Zealand, which shall protect the purchaser by limiting or eradicating the harmful or fraudulent nostrums and quack enterprises, while at the same time fostering the reputable patent medicinès, which are, happily, a growing class."

On a previous page we reprint, by permission of *Collier's Weekly*, what Mr. Adams says concerning the Oppenheimer Treatment. Some of our readers may be interested in knowing that we have already been threatened with a libel suit because of an editorial appearing in the JOURNAL for August, 1905. S.

THE READING SESSION ALREADY.

The Berks County members have no intention of letting any one think that they are not to have really the best session ever held. Dr. Fremont W. Frankhauser is the Chairman of the Committee on Arrangements, and the chairmen of the subcommittees are as follows: Finance, Dr. George W. Kehl; Entertainment, Dr. Daniel Longaker; Place of Meeting, Dr. Irvin H. Hartman; Hotels, Dr. John F. Feiek; Exhibits, Dr. S. Banks Taylor; Printing, Dr. William S. Bertolet. If promptness, planning and energy will bring forth a good session, then make your plans to be on hand in Reading next September. The Committee on Scientific Work is also already at work and will hold a meeting in Philadelphia, November 24. S.

GAILLARD'S SOUTHERN MEDICINE.

Gaillard's Southern Medicine has removed its main editorial office to 21 West 97th St., New York, at which address the editor, Dr. W. E. Fitch, will hereafter be found. An editorial staff and the business management will remain at Savannah. S.

CENSORIAL AND COUNCILOR DISTRICTS.

A map showing the division of the state into censorial and councilor districts will be found on advertising page X. It will be noticed that each councilor district is composed of two censorial districts. Look up what the By-Laws say regarding district censors and councilors. If you have mislaid your copy of the By-Laws write for another copy. S.

THE DISTRICT CENSORS.

District censors are officers of the Medical Society of the State of Pennsylvania. There is one for each component county society. "Each component medical society is requested to present to the House of Delegates for its consideration, the name of a suitable member for District Censor." It does not follow that such nominee will be elected, though in most cases the wish of the local society will be carried out. The nominee for District Censor should be a member who takes an interest in the work of the county society, and a man free from prejudice and self seeking. A list of district censors for the year ending with September, 1907, will be found on page 2 of the October JOURNAL. S.

THE COUNCILORS.

Each of the nine elective Trustees is a Councilor. He "shall be organizer and peacemaker for a district consisting of certain counties assigned him by the Council. He shall visit the counties in his district at least once a year, for the purpose of organizing component societies where none exist; for inquiring into the condition of the profession, and for improving and increasing the zeal of component societies and their members." For a list of the councilors with their respective districts see advertising page X. S.

DISTRICT MEETINGS.

Each Censorial District, not Councilor District, "shall hold a district meeting at least once every two years, for the purpose of increasing acquaintance, good fellowship and organization among the physicians of the district. Only members of a component medical society in the district shall be eligible to membership or office at such meeting, but all physicians residing in the district who are eligible to membership in a component medical society shall be invited to the meetings." How shall district meetings be promoted? It is natural that the district censors should take the initiative, and by correspondence with each other and with the secretaries call a meeting at a suitable time and place. If these officers fail to make a start there is no reason why the presidents or the secretaries of the local societies should not make the move. Or any member of any component society may start the ball rolling. The officers of each component society in the district should be consulted first before any general invitation is given, then go ahead and make it a success even though some of the societies are slow to join in the movement. S.

NEW YORK REQUIRES FOUR YEARS.

Graduates of medical colleges that grant their degree under conditions other than four full years, in separate calendar years, of attendance within a medical school will not be eligible for examination in several of the states. The inclosed letter shows this for New York State.

New York State Educational Department.
Examinations Division.
Charles F. Wheelock, Chief.
Albany, N. Y., Nov. 5, 1906.

Dr. Henry Beates, Jr.,
260 South 16th St.,
Philadelphia, Pa.

Dear Sir:

We can not accept the diplomas where the applicant has not taken four courses of medical lectures in four different academic years in a registered medical school.

Very truly yours,
Chas. F. Wheelock.

Thus, students of dentistry, pharmacy, veterinary medicine and biology if admitted to advanced standing, that is, the second year of medical college work, will be barred from examination for licensure to practice in New York. H. B.

TO CHESS PLAYERS.

The Tri-State Chess Association, an association of over 400 players, most of whom live in the Mississippi Valley, is arranging a correspondence match at chess, the doctors *vs.* the laity. It is desired to have physicians from every section of the United States engage in this match, and every one who is a lover of chess is urged to become a consultant in the case. You are therefore urged to send name and address to the president, Dr. VanNuys, Lorain, O., stating the number of games you will take on. The match will begin early in November; entries accepted until January 1. There is no fee attached to the match. S.

Changes in Membership of County Societies.

The following new names have been reported from October 1, to November 1: George H. Seaks, New Oxford; Herbert Spencer Arthur, Victor W. Cowan, McKeesport; C. L. Bradford, George S. McKnight, Samuel B. Rhine, Helen F. Upham, Pittsburg; Clarence C. Croft, Emsworth; Hugh S. Maxwell, Beechview; Harold G. Palmer, Allegheny; John H. Silvey, Sharpsburg; Joel F.

Scott, Wilson; Alfred G. Coughlin, Athens; William S. Buehler, Wernersville; Harry G. Nickel, Johnstown; J. Edward Nickel, Glen Moore; Edgar W. Palmer, Greencastle; Carl B. Crammer, Iselin; Walter L. Campbell, David R. Harris, Brant E. Sankey, New Castle; Earl E. Wagner, Wilkes-Barre; Joseph W. Albright, Muncy; J. P. Harley, Williamsport; Warren Z. Anders, Troppe; John Percy Bethel, Lida Stewart Cogill, William Devitt, Robert Bruce Grimes, Fred H. Klaer, Charles R. Heed, A. Spencer Kaufman, Fredrick C. Lehman, William D. Moore, Thomas S. Stewart, Charles M. Stiles, B. Frank Walters, Walter M. L. Ziegler, Philadelphia; George R. S. Corson, Pottsville; Harry M. Wasley, William Joseph Winters, Shenandoah; John Gimmel, Millville.

Henry F. Eberman, Lancaster, is no longer a member of the Lancaster County Society.

James F. Stone and Gertrude A. Walker, Philadelphia, have resigned from the Philadelphia County Society.

Howard H. Griffee (Univ. of Pa., '75) died at his home in Taylorsville, October 28, of an affection of the heart, aged 56.

Harry E. Musser (Jefferson Medical College, '75) died at his home in Witmer, September 22, from angina pectoris, aged 54.

Guy Dudley Hoag (Bellevue Hospital Medical College, '79) died at his home in New Castle, October 6, from tuberculosis, aged 31.

Frank Beers (Jefferson Medical College, '81) of Bushkill, died suddenly, October 29, from heart disease, aged 47.

Rebecca Fleisher (Woman's Medical College, '86) died at her home in Philadelphia, recently.

Charles G. Eicher has removed from Esplen Borough to McKees Rocks.

George W. Hiett has removed from Pittsburg to Wilkinsburg.

John B. Ritchey has removed from Carnegie to 420 West Main St., Denison, Texas.

Daniel W. Davis has removed from Expedit to 524 Walnut St., Philadelphia.

Eugene F. Meschter has removed from Youngwood to Altoona.

John B. Devor has removed from Fort Loudon to Harrisburg.

George M. Scott has removed from Rutan to Waynesburg.

Rebecca Laughlin has removed from Waynesboro to Washington, D. C.

Charles A. McCauley has removed from Petersburg to 4316 Walnut St., Philadelphia.

George C. Merriman has removed from Scranton to Lake Como, Wayne Co.

Guy Levis Alexander has removed from Pittsburg to Oakmont.

Lawrence W. Dana has removed from Marienville to Broadford.

Montgomery H. Biggs has removed from Philadelphia to Rutherfordton, N. C.

John Evans has removed from Rockwood to 602 Cator Ave., Baltimore, Md.

Frank C. Katherman has removed from Seward to Blairsville.

Present membership 4636. S.

State News Items.

Dr. Andrew MacFarlane (Univ. Pa., '74) died in Philadelphia, Nov. 7.

Dr. Albert C. McGeagh, Pittsburg, and Miss Myrtle B. Price, were married recently.

Dr. John J. Light and Miss Sarah Ada Bomberger, of Lebanon, were married October 29.

Dr. Frank Keagy and Miss Martha Bennett, both of Altoona, were married September 20.

Dr. Ralph M. Tidd and Miss Nettie E. Whetson, both of Clark, were married September 24.

Dr. Fred C. Bucher (University of Pennsylvania, 1905) of Columbia, died October 30, at Mt. Joy.

Dr. Joseph F. Miller, Stroudsburg, and Miss Gertrude Burton, Philadelphia, were recently married.

Dr. Samuel Lloyd McCarthy, Altoona, and Miss Marion Miller, Media, were married October 6.

Dr. John J. Sullivan, Jr., Scranton, and Miss Frances Mary O'Neill, Philadelphia, were married October 10.

Dr. J. C. Miller (Jefferson Medical College, 1885) died at his home in Jeannette, September 23, aged 47.

Dr. Chas. A. E. Codman, Philadelphia, is at Atlantic City, recovering from an operation for appendicitis.

Dr. Matthew Woods, Philadelphia, delivered an address, October 25, before the Allentown Hospital Association.

Dr. Frank H. Harne (College of Physicians and Surgeons, Baltimore) died at his home in Santee's Mill, aged 54.

The Philadelphia College of Pharmacy advocates the closing of drug stores on Sunday, or at least for a part of the day.

Dr. Samuel S. Royer died at Allentown, October 17, from wounds in the head received during the Civil War, aged 59.

Dr. Samuel R. Sample (Jefferson Medical College, '57) died suddenly at his home in Intercourse, September 30, aged 72.

Dr. W. W. Richardson, Philadelphia, has been elected resident physician of the State Hospital for the Insane at Norristown, to succeed the late Dr. D. D. Richardson.

Dr. William Harvey Axtell, (Medical College of Ohio) died at his home in Sheakleyville, September 19, from senile debility, after an illness of eight months, aged 90.

Drs. Edward Anthony Spitzka and George McClellan, the new professors of anatomy in Jefferson Medical College, were the guests of honor at the Medical Club in Philadelphia, October 20.

Drs. William E. Hughes and Robert N. Willson will conduct a series of postgraduate courses in internal medicine in the wards of the Philadelphia Hospital. Each course will comprise six weeks of bedside teaching.

The Society of Clinical Surgery held its seventh semiannual meeting in Philadelphia, October 26 and 27. The time was spent in clinical operations, surgical demonstrations, and informal interchange of the data of experience.

A New Hospital for the Insane in Philadelphia will be built if the Council will appropriate $261,000 to purchase 870 acres at Byberry. Director Coplin has planned to erect a hospital capable of caring for 2,500 insane persons, and costing with other buildings under contemplation $2,000,000.

Medical Students in Pennsylvania Colleges. The following statistics have been furnished by the respective colleges:—

	First year.	Second year.	Third year.	Fourth year.	Fifth year.	Total.
Univ. of Penn.	192	122	143	122		579
Jeff. Med. Coll.	166	140	169	158		633
Medico-Chi. Coll.	118	172	100	101		491
Woman's Med. Coll.	42	27	38	33		140
Temple Coll.	50	25	15	15	7	112
West. Penn. Med. Coll.	142	96	67	56		361
						2316

Contributions to the California Physicians Relief Fund have been turned over to the American Medical Association California Relief Fund through the Committee of the Philadelphia County Medical Society amounting to $2490.50. Through the Allegheny County Medical Society, $808.00. Total, $3298.50.

Physicians as Officers. The Following elections are noted:—

Congressman—Dr. Andrew J. Barchfield, Pittsburg, reëlected.

State Senator—Dr. William C. Miller, Bedford, reëlected.

Representative—Dr. Rein K. Hartzell, Allentown, Lehigh County; Dr. John M. Martin, Grove City, Mercer County; Dr. J. S. Hunt, Easton, Northampton County; Dr. J. S. Krebs, Herndon, Northumberland County; Dr. William W. Sprowls, Houston, Washington County; Dr. C. L. Stevens, Athens, Bradford County; Dr. E. S. Meals, Harrisburg; Drs. E. E. McAdoo, Ligonier, and E. P. Weddell, Scottdale, Westmoreland County; and Dr. John W. Bowman, Lemoyne, Cumberland County.

Coroner—Dr. Robert E. Strasser, Reading; Dr. A. F. Hardt, Williamsport, and Dr. S. E. Smith, Allen, Cumberland County.

Communication.

Memorial to Dr. N. S. Davis.

Philadelphia, October 31, 1906.

To the Editor:—I desire to call the attention of the members of the Medical Society of the State of Pennsylvania to the fact that an effort is being made to create a fund to be devoted to a suitable memorial to the late Dr. N. S. Davis. From every standpoint, it seems fitting to thus honor the founder of the American Medical Association. To perpetuate the memory of the original promoter of an organization that has proven itself indispensable to professional progress in this country should be regarded no less a duty than pleasure.

I have been appointed a member of a committee (of which Dr. H. O. Marcy of Boston is chairman) created for the purpose of soliciting contributions to this fund, with full power to represent the state of Pennsylvania. Contributions in any amount will be acknowledged by sending a receipt for same and duly credited to the donor.

J. M. ANDERS.

Reviews.

MATERIA MEDICA FOR NURSES. By John E. Groff, Ph.G., Professor of Materia Medica, Botany and Pharmacognosy in the Rhode Island College of Pharmacy. Third edition revised. Pages 176. Price $1.25. Philadelphia: P. Blakiston's Son & Co.

This little book is concise, up to date and practical. The nurse can learn from it much that will make her more valuable to the physician and to the patient. She should know something about the names and nature of drugs, weights and measures, therapeutic terms, symptoms of poisoning and antidotes, and this book will aid her in gaining such information. L. F. P.

PRACTICAL DIETETICS with Reference to Diet in Disease. By Alida Frances Pattee, Graduate, Boston Normal School of Household Arts; Special Lecturer at Bellevue, Mount Sinai, Hahnemann, and the Flower Hospital Training Schools for Nurses, New York City; St. Vincent de Paul Hospital, Brockville, Ontario, Canada. Fourth edition. 12mo, cloth. 300 pages. Price, $1.00 net; by mail, $1.10; C. O. D., $1.25. A. F. Pattee, Publisher, 52 West 39th Street, New York.

This valuable little book should not only appeal to the trained nurse to whom it is as a good companion, but the physician who is desirous of keeping his patients in good humor by a digestible and palatable diet. R. R. J.

A TREATISE ON SURGERY. In two volumes. By George R. Fowler, M. D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic. Two imperial octavos of 725 pages each, with 888 text illustrations and 4 colored plates, all original. Philadelphia: W. B. Saunders Company, 1906. Per set: Cloth, $15.00 net; half morocco, $17.00 net.

The second volume of this most practical work on surgery is not less valuable than the first which was so well received. It treats of the surgery of the dorsal and lumbar vertebræ, abdominal and pelvic regions, female pelvic organs, and the upper and lower extremities. A comparison of this work with any good surgery of thirty years ago shows the omission of many doubtful or discarded methods, but little if anything of value found in earlier works on surgery will be missed. The illustrations are numerous, practical and original. Each surgical procedure is clearly shown by word and by illustration. Each volume has a complete index, and this second volume has in addition an equally complete general index. L. F. P.

CASE TEACHING IN MEDICINE. Exercises in Diagnosis, Prognosis and Treatment of Actual Cases. By Richard C. Cabot, M. D. (Harvard). 8vo. 220 pages with space for notes. Introduction and Indexes. Price, $1.50. D. C. Heath & Company, Boston.

The method devised by the author of giving actual histories and drawing conclusions therefrom has many excellent points in its favor. Nothing will serve so well to make the student exact in his examination of a patient as a thorough acquaintance with the method here carried out. The deductions drawn from the various findings will prove helpful not alone to the students but to the practitioners also. The same may be said of the postmortem findings appended in cases in which a fatal ending took place. Seventy-eight histories are given, each illustrating some special phase in diagnosis. K.

A LABORATORY MANUAL OF PHYSIOLOGICAL CHEMISTRY. By Elbert W. Rockwood, M. D., Ph.D., Professor of Chemistry in the University of Iowa. Second edition, revised and enlarged, with one colored plate and three plates of microscopical preparations. 8vo. 229 pages. Bound in buckram. F. A. Davis Company, Philadelphia, 1906.

As the author states, in no department of biology have the advances of recent years been more marked than in that which is studied under the name of physiological or biological chemistry. The truth of this fact is so imperative that both the elementary student and the physician demand a text-book especially adapted to study and research along these comparatively new lines. This need Professor Rockwood's book is admirably adapted to fill. The language is concise and to the point, and the clarity of the subject presentation admits of the intelligent understanding of the various experiments by even the elementary student. The more important experiments are printed in large, clear type; the less important in smaller. The work is interleaved for the convenience of the student. The busy practitioner will find this little book valuable as an aid to diagnosis in the many cases demanding a thorough research into the metabolic processes and changes.

C. M. W.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS. A practical exposition of the methods, other than drug-giving, useful for the prevention of disease and in the treatment of the sick. Edited by Solomon Solis Cohen, A. M., M. D., Volume XI.

This is the last volume of this [illegible] system and deals principally with subjects which, while they have not been [illegible] out in full, give promise of valuable additions to our therapeutic [illegible].

The subjects considered in this volume are: (1) Serum Therapy, by [illegible] M. D.; (2) Organotherapy, by Oliver T. Osborne, M. D.; [illegible] Thomson, M. D.; (4) [illegible] Frederick [illegible] Parker, M. D.; (5) An outline of the principles of therapeutics with especial reference to physiologic therapeutics, by the editor; (6) with addendum on x-ray therapy; (7) and last but of great value, an index-digest of the complete system of eleven volumes.

It is in effect a compendium of the practice of medicine from the view-point of treatment by physiologic measures, giving also many hints as to auxiliary treatment by drugs.

The articles in this volume are decidedly modern and are of scientific and practical value to every member of our profession.

C. H. M.

PROGRESSIVE MEDICINE. Volume VIII., March, 1908. A quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, [illegible] pages, 31 illustrations. Per annum, in four cloth bound volumes, $9.00; in paper binding, $6.00; carriage paid to any address. Lea Brothers & Co., Philadelphia.

This number of the series is of value to the surgeon, the physician, and the specialist.

The subjects considered in this volume are: (1) The Surgery of the Head, Neck and Thorax, by Charles H. Frazier, M. D.; (2) Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia and Influenza, by Robert B. Preble, M. D.; (3) The Diseases of Children, by Floyd M. Crandall, M. D.; (4) Rhinology and Laryngology, by D. Braden Kyle, M. D., and (5) Otology, by B. Alexander Randall, M. D.

Dr. Frazier is well qualified to advise the profession on the value of recent literature concerning surgery of the brain and cranial nerves. Dr. Preble quotes many valuable papers on infectious diseases. The report of the U. S. Commission appointed to investigate typhoid fever as it appeared among the troops during the Spanish-American War, gives a mortality of 7.61 per cent. in over 20,000 cases.

At the Pennsylvania Hospital, in the past four years, among 19[illegible] cases the mortality has been 7.8 per cent.

Dr. Crandall devotes [illegible] pages to pediatrics. He believes that one of the greatest needs of the present day, in relation to this subject "is a more intelligent knowledge on the part of practitioners of diet, and a better understanding of the conditions of health and growth." Infant feeding is given special attention.

Dr. Kyle and Dr. Randall both assimilate only the very best from a vast amount of material.

C. H. M.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Eleventh edition, enlarged and thoroughly revised to accord with the eighth decennial revision of the U. S. Pharmacopeia 1905. In one octavo volume of 910 pages, with 113 engravings and four colored plates. Cloth, $4.00, net; leather, $5.00, net; half morocco, $[illegible].50, net. Lea Brothers & Co., Philadelphia.

Those familiar with this work will not be surprised that it has reached its eleventh edition. It is intended for both the undergraduate student and the practicing physician. The volume is divided into four parts: First, General Therapeutic Considerations; second, Drugs; third, Remedial Measures Other than Drugs, and Feeding the Sick; fourth, Treatment of Diseases, Table of Doses of Medicines, and Indexes. Electricity is purposely omitted from Part Three "since electrical therapeutics has outgrown any work save one devoted to that subject alone." Part Four "was written, not with the object of providing a rigid system for treating disease, but rather for the purpose of bringing together the best remedies, and showing how and why they are given." Dr. G. E. de Schweinitz wrote the article on the treatment of diseases of the eye; Dr. Edward Martin those on the treatment of venereal diseases and on antisepsis; and Dr. Barton C. Hirst those on the treatment of the puerperal state. L. F. P.

A MANUAL OF OTOLOGY. By Gorham Bacon, A. B., M. D., Professor of Otology in the College of Physicians and Surgeons, Columbia University; Aural Surgeon, New York Eye and Ear Infirmary. With an introductory chapter by Clarence John Blake, M. D., Professor of Otology in Harvard University. Fourth edition, revised and enlarged. Handsome 12mo volume of 485 pages, with 134 illustrations and 11 plates. Price, cloth, $2.25 net. Lea Brothers & Co., Philadelphia, 1906.

The author in this new edition has improved and added to the illustrations and increased the number of pages to enable him to include important advances made in Otology. Among the new topics considered may be mentioned osteomyelitis, primary jugular bulb thrombosis and suppurative inflammation of the labyrinth, while the portions treating on leukocytosis, lumbar puncture and the treatment of facial paralysis, have been entirely rewritten.

The scope of the work will be indicated by giving the title of a few chapters: I., Anatomy and physiology of the ear. II., Methods of examination. VI., VIII. and IX, Otitis media. VII., Adenoid growths, enlarged tonsils, diseases of nasal passages. XI., Diseases of the mastoid process. XII., Intracranial complications. Chapter XIII., on Diseases of the sound-perceiving apparatus, treats of results of inflammations; fractures; hyperemia; anemia and increased pressure of the labyrinth; hemorrhage into the labyrinth; otitis media; Meniere's disease; boilermakers' deafness; action of drugs; primary disease of the bony labyrinthine capsule; deafness due to old age; diseases affecting the auditory nerve; new growths affecting the inner ear; hyperesthesia acustica. The appendix gives the method of preparing smears from pus, the making of cultivations, and directions for physiological inoculation. S.

INFECTION, IMMUNITY AND SERUM THERAPY. In Relation to the Infectious Diseases which Attack Man; with Considerations of the Allied Subjects of Agglutination, Precipitation, Hemolysis, etc. By H. T. Ricketts, M. D., Instructor in Pathology, University of Chicago. Chicago: American Medical Association Press, 103 Dearborn Ave. 1906.

The work embodies in a completed form the series of articles which appeared in *The Journal of the American Medical Association* during the year 1905 on the subject of "Immunity." The advantage of having these articles in book form with marginal subheadings and an excellent index will be greatly appreciated by those who are interested in the subject matter of the work, and are desirous of having a handy volume for ready reference.

In Part One the author treats in a general way the subjects of parasitism, infectiousness and contagiousness, infectious etiology, natural and acquired immunity, toxins and antitoxins, the phenomena of agglutination, precipitins, and cytotoxins. Phagocytosis and the side-chain theory of Ehrlich are clearly explained and their relationship shown. In the last chapter of Part One, the principles of serum therapy are taken up and freely discussed.

In Part Two special infections are treated under appropriate subheadings. The author does not attempt to classify them, but groups them as he says, "on a basis which is partly etiologic, partly with reference to pathogenic properties of the microörganisms, and partly to the nature of the reactions excited in the body by infection or immunization." This arrangement would seem to have its advantages over a more strictly etiologic classification. On the whole the author has handled a technical subject in a way that is most interesting, and one that holds the reader's attention to the end.

On account of the great importance of the subject, it would seem that this book should receive a friendly welcome from the great body of the profession. J. T. H.

THE PROPHYLAXIS AND TREATMENT OF INTERNAL DISEASES. By F. Forchheimer, M. D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, Department of Medicine of the University of Cincinnati; Physician to the Good Samaritan Hospital; Member of the Association of American Physicians, the American Pediatric Society. D. Appleton and Company, 1906.

The field embraced by this work has been subdivided into two main parts; namely, prophylaxis and therapy. Special attention has been given to prophylaxis, and the author's views and recommendations are in keeping with the real advances in preventive medicine. This branch of the healing art has been placed on a rational basis as the result of the progress in our knowledge of the microbic origin of disease. A comprehensive discussion of this side of treatment (such as will be found in these pages), therefore, is both timely and valuable. In his introduction, the author has well said: "The practical application of prophylactic measures in the individual is the duty of the practitioner, who, as in all departments of medicine, is called upon to apply and to test the conclusions reached by others."

Before introducing the reader to the treatment of the diseases of the especial organs or systems, he considers their general prophylaxis and also their individual prophylaxis, in some cases at least. It may be questioned whether the author's view relative to the value of "trained exposure to draughts" will be generally accepted. He states, "According to my observation, a draught never produces an inflammation of a mucous membrane," and, further, that anyone can "so educate his skin that the nervous reaction does not follow." Dr. Forchheimer refers to the experiments of Hebra on human beings in support of his position. We are inclined to the opinion that the author is not far wrong in claiming that this can be accomplished by the so-called hardening process.

The subject of treatment proper is presented in a thoroughly systematic manner, so that the work is well adapted to the needs of the busy practitioner for study and ready reference. For example, the subject matter of the treatment of the infectious diseases is considered mainly under the following heads: Specific treatment, in some instances causal treatment, general treatment, symptomatic treatment, complications, sequelæ and convalescence. Additionally, special varieties of this class of diseases are discussed separately. We regard the classification adopted as most rational in a work on the treatment of internal diseases for the use of practitioners as well as students.

The specific treatment, including the use of sera for the various infections, is clearly set forth and must be said to add to the general utility of the work, although but few acknowledged specifics are available. Causal treatment is justly made prominent in the discussion of individual affections; this is in consonance with the accepted principle in therapeutics; namely, that the constant aim should be to combat causes. While the practioner of medicine is called upon to treat symptoms, a feature that has received due attention by the author, both experience and general pathology teach that this should be avoided as far as possible. The author has emphasized the fact that the patient must be treated as an individual and the importance of correlating the individual effects of drugs with our knowledge concerning their physiological effects as observed in the lower animals. This fact leads up to the author's dictum that in order to obtain the best therapeutic results the physician should be both "scientist and practitioner."

Rather elaborate attention has been bestowed upon the subject of diet in connection with the individual diseases which is a most praiseworthy feature. Foods, if judiciously employed, are capable of playing a most important part in the successful treatment of diseases, and this fact has been thoroughly appreciated by the author. The indications for surgical intervention are briefly but clearly stated. Dr. Forchheimer is thoroughly practical and his recommendations are presented in the light of an extended clinical experience and the latest investigations. J. M. A.

NEW BOOKS.

The Ear and Its Diseases. A Text-Book for Students and Physicians. By Seth Scott Bishop, B.S., M.D., LL.D., Honorary President of the Faculty and Professor in the Postgraduate School and Hospital of Chicago; Surgeon to the Postgraduate Hospital and to the Illinois Hospital, etc. Illustrated with 27 colored lithographs and 200 additional illustrations. Royal Octavo, 440 pages. Bound in Extra Cloth. Price, $4.00, net. F. A. Davis Company, publishers, Philadelphia.

Studies in the Psychology of Sex—Erotic Symbolism, the Mechanism of Detumescence, the Psychic State of Pregnancy. By Havelock Ellis. 6⅜ x 8⅞ inches. Pages x-285. Extra Cloth, $2.00 net. Sold only by subscription to physicians, lawyers, and scientists. F. A. Davis Company, publishers, Philadelphia.

Diseases of the Digestive System. Edited by Frank Billings, M. D., Professor of Medicine, University of Chicago, and Professor of Medicine and Dean of Faculty, Rush Medical College. An authorized translation from *Die Deutsche Klinik* under the general supervision of Julius L. Salinger, M. D. Forty-five illustrations in the text. New York: D. Appleton and Company. **1906.**

A Treatise on the Motor Apparatus of the Eyes. Embracing an Exposition of the Anomalies of the Ocular Adjustments and Their Treatment, with the Anatomy and Physiology of the Muscles and Their Accessories. By George T. Stevens, M. D., Ph.D. Illustrated with 184 engravings, some in colors. 496 pages, Royal Octavo. Bound in Extra Cloth, Bevelled Edges, $4.50 net. F. A. Davis Company, publishers, Philadelphia.

Second Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartum. Andrew Balfour, M. D., B.Sc., F. R. C. P., Edin., D. P. H., Camb., Director, Fellow of the Royal Institute of the Public Health, Member of the Epidemiological Society, the Incorporated Society of Medical Officers of Health, and the Association of Economic Biologists, Medical Officer of Health, Khartum, etc. Department of Education, Sudan Government, Khartum, 1906.

A Primer of Psychology and Mental Disease. For use in Training Schools for Attendants and Nurses and in Medical Classes, and as a Ready Reference for the Practitioner. By C. B. Burr, M. D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases; formerly Medical Superintendent of the Eastern Michigan Asylum. Third edition. Thoroughly Revised, with Illustrations. Pages viii-183, 12mo. Bound in Extra Vellum Cloth, $1.25 net. F. A. Davis Company, publishers, Philadelphia.

Operative Gynecology. By Howard A. Kelly, A. B., M. D., LL.D., F. R. C. S. (Hon. Edinb.): Professor of Gynecological Surgery in the Johns Hopkins University and Gynecologist to the Johns Hopkins Hospital; Fellow of the American Gynecological Society; Honorary Fellow to the Edinburgh Obstetrical Society; etc. With eleven plates and seven hundred and three original illustrations for the most part by Max Brodel, Associate Professor of Art Applied to Medicine in the Johns Hopkins University. Second edition, revised and enlarged. In two volumes. Price $15.00. D. Appleton and Company, New York, 1906.

SAUNDERS' NEW BOOKS.

Messrs. W. B. Saunders Company announce for publication in the early fall the following works:

Keen's Surgery: Its Principles and Practice. Volume I.

Sobotta and McMurrich's Human Anatomy. Volume III.

Webster's Text-Book of Gynecology.

Hill's Histology and Organography.

McConnell's Pathology.

Morrow's Immediate Care of the Injured.

Stevenson's Photoscopy (Retinoscopy and Skiascopy).

Preiswerk and Warren's Atlas of Dentistry.

Goepp's State Board Questions and Answers.

Lusk's Elements of Nutrition.

The new work on Surgery, edited by Dr. W. W. Keen, will consist of five octavo volumes, and contain over 1500 original illustrations. The entire work is written by the leaders of modern surgery—men whose names are inseparably associated with the subjects upon which they have written.

Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, Wednesday, October 3, 1906.
The President, Dr. Arthur V. Meigs,
in the Chair.

Sacrococcygeal Tumor (Teratoma) with an Opening Entirely Through the Sacrum, and a Sinus Passing Through This Opening and Communicating with the Rectum, the Sinus Resembling a Trachea. Dr. W. W. Keen and Dr. W. M. Late Coplin presented this paper. The patient, a child aged two, was born with a moderate sized tumor in the lumbosacral region. Near its lower margin there was a small fistulous opening in the skin. The size of the tumor was 21 x 12 cm. and 5 cm. in thickness, with a slightly developed hypertrichosis over a considerable area, suggesting a spina bifida occulta. There had been no discharge of pus suggestive of abscess by which the opening could have been established and the sinus was considered, beyond doubt, to be congenital. Examination under ether revealed the edges of an opening in the sacrum just above the fistulous opening posteriorly. Insertion of the finger into the rectum revealed an opening in the sacrum anteriorly opposite the same point, which would admit of the end of the forefinger. A probe penetrated 6 cm. and could be felt through the mucous membrane of the rectum. There was no communication with the gut, but it was clear that there was a perforation completely through the sacrum and that the fistula passed through this perforation in the bone from the rectum to the skin, since an enema immediately escaped through the fistula.

Operation was done on November 4, 1902. A transverse eliptical incision was made enclosing the fistulous opening. The tumor was dissected from the deep fascia and the fistula left as a pedicle. After dissecting out the fistula and cutting it across, it was found to be a tube of considerably larger caliber than the opening in the skin. The internal caliber of the tube was about 4 to 5 mm. and lined with mucous membrane. The wall of the sinus was inverted and closed with suture. The upper margin of the spina bifida was at the second sacral vertebra, and measured 3 cm. by 1.5 cm. No relation of the sinus to the spinal cord or to the sub-dural space was evident. Instead of being lined with endothelium, it was lined with an epithelial mucous membrane. The wound was closed with interrupted sutures. The wound slowly healed. The sinus soon reopened and persisted. Following a second operation done in October, 1903, the wound healed without reaction.

The case was regarded as a rare form of teratoma, unique by reason of the sinus which, beginning at the skin, perforated the sacrum and terminated in the caliber of the rectum. At the age of five years skiagraphs were taken. One showed an oval opening consisting of upper and lower portions with a slight constriction in the middle, producing the appearance of the figure 8. There was apparently no bony sacrum and coccyx below about the second sacral vertebra. A second skiagraph showed that the body of the first lumbar vertebra was broader than normal; that of the second a little broader, and that of the third nearly twice the breadth of a normal vertebra and having a marked tendency toward separation into a right and a left half. Just below the level of the body of the third lumbar vertebra was a dark area suggestive of an abortive humerus, forearm, and possibly a hand. The author believed it to be certainly a bigerminal teratoma, possibly a trigerminal, the duplicated spine representing the imperfect fusion of the two ova while the tumor with its curious development of the sinus represented an imperfectly developed trachea or bronchus, and possibly a rudimentary arm representing a third ovum.

At the present time, almost three years since the last operation, the child is reported as well developed but walking with a waddling gait, due presumably to the unusual breadth of the pelvis or possibly to an instability in the lumbar spine. There has been no trouble from fecal accumulation in the existing short diverticulum from the lumen of the rectum to the point of obliteration of the tubular sinus at the posterior surface of the sacrum. Neither has there been any tendency to the formation of an anterior sacral meningocele.

Dr. Coplin in his remarks from the embryological and pathological standpoint spoke of the possible deviations from the normal in the evolution of the tissues embraced in the embryo, stating that within recent years but few groups of tumors have attracted the attention of investigators as have new growths of the sacrococcygeal region. The discussion was said to have been warmest over the questions of the monogerminal or the bigerminal origin of teratomata. Many of such tumors the author thought might certainly be considered monogerminal. The bigerminal origin of many sacrococcygeal tumors was said to be best in accord with the known facts concerning embryology and neoplastic development and was said to be the commonly accepted explanation for duplicated or parasitic monsters including the attachment to, or implantation of one fetus upon or within another. This theory placed all tumors containing evidence of such highly organized bodies as could best be explained by the assumption that they originated from an impregnated ovum directly in line with the grosser developmental anomalies represented by autosite and parasite. An interesting field of experimentation considered by Féré, Chiari and also Lucene and Legros was said to be the artificial production of tumors of this type by grafting young chick embryos into the cavities or tissues of hens. A certain measure of success had been obtained in that after seven weeks skin with attached feathers had been found in the abdominal cavity. The grafts had developed cartilage and bone, the latter showing epiphyseal formation, trachea-like structures and even retinal elements. Similar experiments at Dr. Coplin's suggestion had been carried on, apparently with negative results. Detailed reports he said would be given in the near future.

In the case reported by Dr. Keen the bigerminal origin was indicated, while the suggestion of trigerminal origin was worthy of consideration. As a rule these tumors were said to show no. tendency to metastasis. It was thought well to remember, however, that ectopias are frequently starting points of malignancy. Another important point was the relation between teratoma of the testicle and syncytioma malignum.

HARRISBURG ACADEMY OF MEDICINE.

The September meeting of the Harrisburg Academy of Medicine was held September 28, at 8 P. M., at the Academy building, with Dr. D. S. Funk in the chair.

The Limitation of Surgery was read by Dr. Thomas S. Blair. He said in part, "The easiest thing in the world is to become narrow, and, since the different fields in medical matters are year after year enjoying more intense cultivation, they are assuming more distinct characteristics and are being fenced off the one from the other. The truth of the matter is that since the old empiricism of therapeutics has been displaced by a laboratory study of pharmacology, physiological action and the minute differentiation between proximate principles in the various plants and the endless chain of graphic formulas in synthetic chemistry, the new science of therapeutics has become so immensely complicated that no one man in the course of an ordinary life time could master it all. And now, also, surgery is being so developed itself, and is developing so many problems of its own, that it too is becoming so complicated that it takes years for the novice to attain to decent proficiency in its various lines. This condition necessitates a division of surgical procedure into well defined specialties, and thus limits surgeons largely to their selected spheres of work."

After reviewing the status of pathologic teaching of to-day and arriving at the conclusion that there has been gathered together an immense mass of unassorted pathologic material, he says, "We have not yet had time to thresh the grain, winnow out the chaff, dry the remnant, rub off the husk, grind, bolt, and blend the flour, and bake the bread of pathology. As we have grown rich in material we have lost certain mental attitudes and spiritual insights, and have become materialists and doubters full of self-adultation and self-sufficiency." The writer of the paper feels that in spite of the progress in bacteriology, including the methods of bacterial invasion of the system and the nature of their poisonous biproducts, there is still a big something in the nature and cause of disease that is not understood, a "something that the humeral pathology or the numerous psoric theories hinted at but did not solve." Illustrating his thought from his own experience, he recited cases of abdominal involvement, gynecologic and others, that were operated upon by the best men in surgery in Baltimore and Philadelphia, and not only were not improved but some of the patients were undoubtedly made worse, especially from a neurologic standpoint.

Operations for fixation of floating kidney, coming under his personal observation, were rarely followed by the desired relief from troublesome symptoms. Ventral suspension and ventral fixation are operations to be avoided as the relief is rarely permanent. Operations on nonseptic ovaries and tubes are not to be recommended unless all therapeutic measures have failed of giving relief.

Sepsis and malignancy are two fields in which surgical relief is so necessary that he who trifles with drugs and neglects the knife is shouldering a tremendous responsibility.

But following operation, especially on the organs of reproduction,there are so many pitiable wrecks for neurologists to treat, that, unless surgeons can find some way to render less distressing the sequelæ of these operations, they should do them less frequently

Sherwood and Dunn report a series of one hundred cases of removal of both ovaries. Seventy-eight per cent. suffered markedly from loss of memory; seventy-five per cent. had diminished sexual desire; sixty per cent. were troubled with vertigo; fifty per cent. suffered a change of character or were made irritable; forty-two per cent. experienced mental depression; thirty-five per cent. notably increased in weight or became abnormally fat; twenty-five per cent. had severe monthly headaches; fifteen per cent. had postoperative skin lesions; thirteen per cent. had no relief from original pain; ten per cent. became melancholics. Many, of course, had more than one of these conditions.

In conclusion Dr. Blair said, "Gentlemen, surgery is a great big field of thought and labor. Cutting is but a small part of it, relatively speaking (the mechanical part), and he who would succeed therein must read and study much upon all that concerns man's physical welfare. If he does, he will be too broad a man to shut his eyes to its limitations."

C. R. Phillips, Reporter.

PHILADELPHIA SOCIETY FOR THE STUDY AND PREVENTION OF SOCIAL DISEASE.

Stated Meeting, Thursday, October 18, at 8:15 P. M. The President, Hon. Abraham M. Beitler in the Chair.

Syphilis and Gonorrhea in Internal Medicine. Dr. William E. Hughes and Dr. Robert N. Willson, Jr., in presenting this paper stated the probability that, if every case of syphilis were isolated and treated by judicious medication and overfeeding in the fresh air, after the manner of tuberculosis, the disease could be stamped out within a few generations. Prevention, however, seemed to offer the only satisfactory measure in the elimination of the disease. Every specialist in medicine is supplied with material for the study of this disease. Every case of tabes should be studied for syphilis. It was thought that syphilis predisposes to tuberculosis.

In treatment the tendency seems to be to follow the intensive, hypodermic method, injecting mercurial solutions deep into the gluteal muscle. The discovery of the spirochæta pallida by Schaudinn makes possible the intelligent treatment of the individual case.

For gonorrhea there should be a new teaching to the effect that it is not merely a local infection of the urethra, but that in every case it is a systemic infection of the blood and lymphatic glands. Many cases of gonorrheal infection were cited from the literature. The gonococcus surgery of the abdomen is said to include from ten to ninety per cent. of all the pelvic suppuration in women. The aorta, the smaller vessels, and the heart itself were said to be subject to attack by the gonococcus. The hope was expressed that when the public is thoroughly informed concerning these diseases that it will alter the social conditions that led Joseph Taber Johnson to say only a year ago that "90 per cent. of all men acquire the disease." Granting the exception taken by some to this large estimate the remaining percentage persists above 50 per cent. It is believed that the only radical cure and method of procedure which will avail is that the medical profession shall give to the laity the full facts in the case. Then upon their coöperation will depend their own salvation.

The Surgery of Syphilis and Gonorrhea. Dr. Ernest Laplace said that the surgical aspects of syphilis arise invariably from a case where the initial sore has been overlooked, and the disease has progressed to its third stage without the knowledge of the patient; or else the patient has been insufficiently treated, and, being discharged before complete destruction of the poison within the body, he becomes a prey to renewed deep-seated manifestations of the disease from a pullulation of what poison was left in the body when treatment was suspended. Surgical syphilis was said to be also a frequent form in hereditary cases. Syphilis incompletely treated might be transmitted by heredity.

Dr. Laplace believes that syphilis can be cured but that it requires a three years' intelligent treatment under the care of a competent physician. People must be educated to the absolute necessity of a three years' treatment.

Gonorrhea is as serious, if not more so than syphilis, because while syphilis can be checked by proper treatment there is no scientific remedy known to cure gonorrhea locally, or to prevent its general infection of the body. Starting from the stricture which may follow, and which may lead to the retention of urine, the gonococcus may infect the bladder and the kidneys. It may also infect the joints and the serous membranes, including the pericardium, the pleura, and the brain. He emphasized the importance of impressing upon the people the full dangers of the infection, and the wisdom of intelligent, continued treatment that the poison may be speedily checked while in the urethra, preventing its dissemination throughout the system.

Prevention and Treatment of Venereal Diseases. Dr. Herman Knapp of New York described infective purulent conjunctivitis and referred to the preventive method of Dr. Credé. The percentage of 10.8 blind children in the Leipsig Maternity has been reduced by Credé to 0.1 to 0.2 by his prophylactic measure. The percentage of blind in other institutions and in our own country has been reduced upon the adoption of this measure. That the cases of infective conjunctivitis are not found in maternity hospitals was suggestive of the advisability of a law to compel obstetricians and midwives to disinfect the eyes of all babes as soon as born. The Credé method was said to have been perfected by the introduction of the new silver salts. Two kinds of metastatic gonorrheal eye disease were described; one, an acute iritis with a faint exudation in the anterior chamber; the other, an acute process, which also occurs in syphilis. Metastatic gonorrheal conjunctivitis was also described.

Under the syphilitic diseases of the eye were described the primary sore, syphilitic iritis, syphilitic inflammation of the ciliary body, syphilitic choroiditis, hereditary syphilitic keratitis, interstitial or parenchymatous syphilitic retinitis, syphilitic neuro-retinitis, and paralysis of the muscles.

Tabes is one among the many diseases of syphilitic origin causing the greatest misery. The greatest number of these cases is due to syphilis, the percentage noted by him some years ago being over seventy-five. The first symptoms occur many years after infection.

Hon. Abraham M. Beitler, president of the society, referred to the society as ranking third in size among societies of its kind in the world and being the largest of its kind in the United States. He felt that the laity had the right to ask of the medical men that the public be guarded against the spread of venereal infection. Toward this end he suggested that the Department of Health be asked to have printed in various languages a pamphlet teaching the infected persons what the infection means to himself and calling his attention to his duty to those near him in the home and office. A further suggestion was that hospital trustees be asked to coöperate with the Department of Health by making it a rule of the out-patient department that such pamphlets be placed in the hands of every infected patient and the information be made clear to them.

Another suggestion was that the latest Health Act be so amended that the Department of Health shall be given the power to place certain cases of syphilis under appropriate care. A case in point cited was that of a child discovered by a dentist in one of the hospitals with syphilis of the mouth. Had the case been one of smallpox, diphtheria or other infectious disease the Department of Health would have had the power to put the child under appropriate care. Such a law, it was argued, was much needed. He agreed that public hospitals were right in excluding cases of venereal diseases but believed they might well equip a ward for such disease, an appropriation for which should be asked of the Legislature. He believed there should be in connection with the Municipal Hospital a department for the treatment of venereal disease where those who could pay and those who could not pay could be cared for. For emergency cases the Municipal Hospital would offer immediate custodial care, and a place of seclusion not obtainable in other hospitals.

Dr. B. Alexander Randall was in accord with the suggestion of Judge Beitler and thought it most fortunate that the subject should be considered by other than medical men, particularly by members of the bar and bench. He called attention to the difficulties in individual cases of giving [illegible] such as a pamphlet to some persons consulting a physician.

Dr. Jay F. Schamberg referred to a certain degree of apathy in the medical profession concerning the suppression of venereal disease. He did not attribute this to a lack of desire to accomplish the purpose but to the feeling that the effort seemed to be futile. The argument that the disease has existed from time immemorial and would continue to exist he thought did not avail in view of the history of similar movements against smallpox and tuberculosis. It has been his practice for four years to issue in a department of one of the hospitals, printed instructions to patients suffering from syphilis. He referred to the insignificant danger of a leper in the community compared with that from the presence of a syphilitic. Mention was made of the case of a colored child attending the public schools while suffering from a case of acquired syphilis in its active stage and of the ease with which the disease could be communicated by means of a slate pencil. He felt that physicians and other members of the community should do what is possible toward limiting the spread of the disease. While the problem is a difficult one, to say that nothing can be done is mere sophistry.

Dr. William E. Hughes regarded the suggestions of the president eminently practical and especially valuable in that they constituted a start in the work. Referring to the time mentioned by Dr. Laplace, three years, as being required to cure a case of syphilis he said it did not take so long to render a case innocuous. The serious difficulty was encountered in the education of the masses to a knowledge of the extremely grave disease and its easy communicability.

Following Dr. Hughes' discussion it was on motion resolved that Dr. Coplin, director of the Department of Health, be asked to formulate rules in accordance with his previously expressed views upon limiting the spread of syphilis and gonorrhea, to be presented at the next meeting of the society, November 15.

Dr. Ernest Laplace called attention to the primary object of the society being that of education, which is the mighty power of modern times. The rich and poor alike were ignorant of the great facts concerning them. Although the evil minded might not be prevented from contracting the disease, at least they should be made to know what they were doing. Upon motion of Dr. Laplace, a resolution was passed to the effect that the executive committee be authorized to confer with the Hospital Association and with the Pennsylvania Hospital with regard to the ability and necessity of establishing wards for the treatment of venereal diseases in the hospitals of Philadelphia.

Dr. Laplace laid stress upon the need of cooperation between the medical profession and the men governing hospitals, and believed that, if the matter were presented to them in the correct light, the movement would be given their support.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

Sixteenth annual meeting, Philadelphia, September 18, 19, 20, 1906.

The meeting convened in the Hall of College of Physicians of Philadelphia at 9.30 A. M., with the president, Dr. William Benham Snow of New York City, in the chair.

Prayer was made by Rev. Dean Groton, and addresses of welcome were made by Hon. John Weaver, mayor of the city, Dr. Charles K. Mills, president of the Philadelphia County Medical Society, and Dr. John V. Shoemaker of the Medico-Chirurgical College.

President's Address: The Past, Present and Future in Physical Therapeutics. From the earliest times experimental medicine has been the bane of both physician and patient and in practice to-day, views and methods of treatment are diverse.

Physical agents in the hands of those trained to employ them will find an important field in future therapeutics. In their use as much depends upon the skill of the operator to obtain the best results as upon the surgeon who operates with the knife. Those who render the most conscientious service in therapeutics are those who do not confine themselves to one line of treatment—drugs, surgery, electrotherapy, phototherapy or any other means or method, but make the best and judicious use of them all. The call is for a broad gauge, honest investigating spirit, with a willingness to adopt all that is good and a determination to weed out the dangerous and spurious in therapeutics. Unfortunately the number in the profession who have made a conscientious study of electricity, radiant energy, heat and cold, exercise, mechanical vibration, and other physical measures, and have a fair conception of their value in therapeutics, is relatively small.

Several general indications are to be observed in therapeutics: (1) Prevention; (2) removal of infection and its effects,—toxemia and congestion; (3) the removal of the effects of trauma—local stasis, and the products of inflammation; and (4) the establishment of functional activities.

Noninfected inflammatory conditions arising from trauma or other irritation call for restoration of circulation and activity where stasis exists, for it is the inertia in the tissues thus established that renders conditions chronic. For its removal mechanical measures are imperative. Static electricity, radiant heat and light, and the judicious employment of mechanical vibration meet in various ways conditions of simple induration.

For the relief of infected inflammatory processes, the removal of stasis is dangerous, except during the first days when the total of infection is not so great that the leukocytes can not destroy it. The general principles involved in the treatment of infectious processes are drainage, increased leukocytosis, by increasing local vascularity, and by the employment of dry hot air, radiant light and heat, the x-ray, and high frequency currents which act upon to destroy the germs *in situ*.

The physical agents are invaluable in inducing the restoration of local and general metabolism, in removing contractures, regulating the vascular conditions and reëstablishing functional activities; thereby promoting necessary tissue building and elimination. The time has come, and the rights of humanity demand at the hands of the great profession to whose care their lives are intrusted, to eliminate useless measures, and to adopt and judiciously employ the best as indicated.

A Plea for Conservatism in Electrotherapeutics with Remarks on Dosage. Dr. A. D. Rockwell of New York City, in presenting this paper, called attention to the lack of judicial fairness revealed by a survey of the current literature of electrotherapeutics. As a result of this, the enthusiast becomes an altogether illogical pessimist and denies the efficacy of the agent that he has crudely tested, and upon the other hand there is an overconfidence characterizing every public utterance or written report. The one encouraging feature in the development of electrotherapy was said to be the fact that a fuller knowledge of physical methods led to a greater exercise of rational judgment in testing them. A good working knowledge of physics and a skilled technic are essentials in the application of electricity. The first broad general principle to be considered in the therapeutics of electricity is its influence over nutrition, and these nutritive effects which are secondary, are far more valuable than the primary effects, be they stimulating or sedative. It should be remembered that electricity may act as a stimulant or as an ugly irritant; or, in many an hyperesthetic condition of the nervous system, as a prompt and unequaled sedative. The necessity of familiarity with Ohm's law was also emphasized. Reverting to the fundamental idea of the nutritional effects of electricity Dr. Rockwell emphasized the fact that its greatest value lies in its general application rather than in the local, thereby affecting either directly or reflexly the whole central and peripheral nervous systems, including the entire muscular and circulatory system under their control. While fully recognizing the value of the newer modalities he accorded to general faradization an individual merit equal to any other of the general methods.

When Are Electrotherapeutics Indicated? Dr. A. C. Geyser of New York City, endeavored to answer the question "When is electrotherapy indicated?" Ignoring all fine technicalities, he explained what was meant by the term, electrotherapy. From certain groups of ailments a few were selected and the rationale explained. He emphasized the fact that of necessity the successful physician must first remove the cause; secondly, treat the patient and not the disease; and thirdly, before selecting any therapeutic measure, think and use common sense.

Dr. Francis B. Bishop of Washington, D. C., raised the question whether or not cases of chorea require stimulation, since chorea is not always due to congestion of the cord, but to nutritive changes in the cord. In the treatment of nervous cases it should be remembered that they do not all respond to electrical treatment in the same way and the current should therefore be suited to the condition of the patient. Neurasthenia, for example, the result of some infectious disease, would require different treatment than when produced by other conditions.

Dr. G. Betton Massey, in answer to the reference to cataphoresis in connection with the x-ray, asserted that the zinc mercury cataphoresis would cure a case of very extended tubercular infiltration of the glands of the neck. An additional argument for its study and general use is its slight expense.

The question of dosage is of special importance in its relation to the galvanic current, because of its chemical or electrolytic power and its profound influence upon the central nervous system, and because it is the only manifestation of electricity that is physiologically exact and whose slightest variation can be measured with absolute accuracy. In the use of the galvanic current for deep-seated neuritis, for the pain due to parenchymatous degeneration and internal cancer, and especially for exophthalmic goiter massive doses are said to be necessary. Barring its surgical uses where an anesthetic is demanded, this massive dose is that where it is carried up to, but not beyond the point of endurance, but without injury to the skin. To overcome the objections found in the use of sculptor's clay as an electrode Dr. Rockwell has devised an electrode consisting of rimmed discs of hard rubber of any diameter desired, the bottom being covered with blocked tin, practically unoxidizable. Filled to the brim with the clay properly prepared it is ready for use.

(To be continued.)

Transactions of the Allegheny County Medical Society.

SEPTEMBER MEETING OF THE ALLEGHENY COUNTY MEDICAL SOCIETY.

A special meeting of the Allegheny County Medical Society was held Tuesday, September 19, at 8:30 P. M., Dr. Ewing W. Day in chair.

The papers of the evening were "The Irregular Regular in Public and Hospital Practice" by Dr. Joseph Price, Philadelphia, and "The Report of a Case of Conjoined Twins Complicating Labor in a Patient with Multiple Fibromata, with Exhibition of Specimens" by Dr. Charles E. Ziegler, Pittsburg.

THE IRREGULAR REGULAR IN PUBLIC AND HOSPITAL PRACTICE.

BY JOSEPH PRICE, M. D.,
Philadelphia.

You are all familiar with quackery in all of its forms; the electrical quack, the osteopath, the tape worm quack, the herb quack. "When all others fail," consult the caustic-paste quack.

Christian Scientists and Bible Readers come to us in the eleventh hour throwing up their hands and crying, "Lord, anything." Philadelphia Salt Works gives its physician one hundred and twenty-five dollars per month to watch its employees; Midvale Steel Works pays its physician a large salary for keeping regular office hours and for prompt care of its injured and sick employees; Swedes Foundry donates fifty dollars a year to a charity for the care of its injured. This does not pay the ambulance service. Discussion of fees for insurance examiners is too great for consideration this evening. Again, the insurance examiner is now making his fight. I lament the loss of bright, professional minds in this work, and that men, beautifully prepared for clinical work, should follow that miserable profession, chest measurements, thumping lungs and gauging urine. The hospital revenue is quite sufficient to pay thrice over for bread and water, steak and milk. I am fond of extravagances for the execution of refined work and gratification of refined tastes, but it encourages evil doers. I protest. It is said that the steward of one great hospital gets over one thousand dollars a year from the undertaker for the one hundred dead that go out. If true, this is one of many hospital irregularities. The society doctor is a feeble offender. The ill are at liberty to employ whom they like.

In the early history of some of our professions, honoraria were common. In primitive or tribal life, the honorarium was not even expected. Modern or commercial life gives us the fee bill, and the salaried and contract doctor. About all the industries and enterprises beneath and above the earth, *i. e.,* mining companies, salt and steel corporations, salary or contract the physician for the care of employees.

Railroads employ an enormous number of physicians and give the majority of them very small pay, fifty to seventy-five dollars per month for their entire time. The employment is a species of servitude. We lose many of our most valuable medical minds in the employ of corporations. I have long since classed the salaried physician among the irregulars. I regret in his case that a good physician has accepted a post that ought not exist. The remuneration of our profession by railroad companies for the very important and extensive work done is trifling and petty, and encourages the corporation to shirk its responsibility to what it is pleased to call a medical relief, sustained by an employee and sufferer. The corporation physician, in his professional etiquette, is strictly regular; he does little or no advertising. His name rarely appears on official documents; not so with the schools and hospitals, they parade their staff and faculty precisely as the quack does his sulphur soap, castoria, or cuticura. It is just here

I want to say that I believe it to be strictly irregular in hospitals and schools to publish fully in circulars, catalogues and advertisements, the age, fame, experience and prominence of their faculty, their specialists, and their departments, new or old. For the hospital, they make special reference and solicit inspection of their new sterilizing plant, of their electrical and hydraulic elevators, of their new roof garden, and smoking room, and at intervals of two or more years call the public's attention to the fact that they have overhauled the old hospital, freshly painted it, and remodeled the operating rooms, and that they will open the nurses' new home on the first of October, and that the isolation department is now ready for the reception of infectious cases. This is all regular for the endowed, and so-called chartered institutions. A private individual, fathering the entire expense of a strictly legitimate private charity hospital or home, would be classed with a Pierce or Lydia Pinkham if he dared so advertise. What do the richly endowed institutions do with their money? They have four to five sources of revenue, the interest on the original endowment, the public giving yearly, the state appropriation, and revenue from the patients. Private individuals, if they advertise in any way, are classed among the quacks, and should be. Some few have even ceased to publish reprints of scientific articles, in order to prevent the criticism, as reprints are considered irregular by some of the best of our prominent teachers. Some of our district societies have formulated rules for the guidance and punishment of members for notices and advertisement of their work in the public press. Commercial practices are not uncommon among prominent practitioners, they are claimed to have been done unwittingly; but they are in too many instances premeditated, and yield a large remuneration.

The "Evil Doer" has tried to tempt all of you; he has laid his gold before you or his check and asked you to put your own figures to it; when tempted you are the irregular regular, or the regular abortionist. It should not be possible for a social reason of any character or magnitude to tempt a pure physician. Pernicious vomiting is often exaggerated into an excuse for the induction of premature abortion; displacements and diseases that do not exist, are given as an excuse to justify a paying practice. I have a horror of quacks; but I honor the stupid old advertiser of goose grease, bear fat, tar soap or sulphur soap, or his mad stone for the cure of hydrophobia, when compared to the well educated irregular, whose advertisement appears almost daily in one form or another in the public press. During society meetings, county, state and national, his picture is to be found in a variety of publications and he never "knows" who wrote him up so fully. The bootblacks and newsboys are quite familiar with his valuable work and contributions. A distinguished teacher, while on the witness stand denouncing the irregularity of the quack on trial for a commercial practice, was shown his name as one of the signers of the irregular's diplomas; he promptly replied, "so much greater the quack." A dishonest man is dangerous enough in his ignorance, but he is tenfold more so when armed with the polished weapons of a "higher education." The educated quack is a double edged sword. Some of the most prominent and successful quacks or irregulars are regular graduates of two or more colleges. In some instances it would seem that the regular profession had much to do with making a good man irregular; court-martialing or excommunicating him from a society for some very petty offense. I have known a few men (fortunately very few) who have been active during their entire professional life in destroying or impairing the usefulness of some one else. It is their profession; they follow it faithfully; they are wholly worthless in legitimate work. They form another class of irregulars, and in short they are the most dangerous of quacks. It is difficult for schools to unload their deadwood. The large faculties admit that they have irregulars and perverts in their midst, but rarely do they use scientific methods of disposing of them. Teachers should be wisely selected; the impress of a teacher is sometimes lasting for either good or evil. The great Gross and Pancoast gave the surgical impress to all they taught. When they were gone, the world lost much, and then there was a blank until Leidy and Agnew put their stamp on a new school of surgeons. It would seem that the four great teachers were proof copies, and after they were struck off the plate was destroyed. I mentioned these four great teachers because I knew them; we might name many others. Again the object is simply to call your attention to good and bad teachers. Occasionally we find a thoroughly unscrupulous and immoral teacher in a prominent school; his influence is always pernicious. He is an irregular teacher and should be weeded out early. There should be a wise choice of quiz-masters, demonstrators and coachers, men that should be advanced, moral, upright, outright and regular. Occasionally I find in my mail a letter of this character: "Dear Doctor, I have a case I would like to send you. You will remember I sent you two cases that paid you good fees, now I would like to have an arrangement or a business understanding," etc.; commercialism in private and in public has done a world of mischief and much to impair the usefulness of individuals and splendid institutions. We have, distributed all over the great land, doctors who are not worthy of the name, dealing in human flesh. They will not take a patient one square or one mile without being paid for it, both by patient and the specialist to whom they take the patient. If an industrious farmer's wife, mother or daughter, a mechanic or a ranchman's kin, he agrees to take the patient for a specified sum of say one hundred and fifty dollars to a hospital or city near or far, his expenses paid. He volunteers to negotiate the expense to be incurred at the hands of the specialist, usually a classmate or old friend. He commonly says, "Now Joe" (or John) "I want you to be *lenient, there's nothing in it for me.* This poor fellow has a joint, a little truck patch, an old ranch, big family, boards his mother-in-law, and has a big mortgage on his place. I think I can get twenty-five or fifty dollars out of him for you." The possessor of said joint or ranch has given him three hundred dollars for professional services. He hastens home with about four hundred and fifty dollars in pocket; he expects to be told by his personal friend, Joe or John, "You keep the twenty-five or fifty dollars for your trouble and expense." This, gentlemen, is not an exaggerated picture, one of them said to my brother, "This poor fellow is a trucker and is having a hard time and struggle." He had collected a fee of five hundred dollars and handed my brother twenty-five dollars, stating that he would get a little more if possible. The opening of the Johns Hopkins Hospital, beautifully endowed for a Baltimore and a Maryland charity, reduced the revenue of all the specialists in Washington, Richmond and southern cities along the great trunk lines running south. They could get free transportation and the hospital wanted the material. The announcer in the big automobiles circling the educational centers, announces the character of the work in certain hospitals, "Six thousand operations done here, two thousand by one man," another, "A physician can take his patient here; put him in a private room and take care of him." That magnificent scientific enthusiasm, the result of the study of bacteriological chemistry, diagnosis and pathology, has not influenced modern medicine enough for us to forget irregularity and advertising. Unfortunately the president, secretary, or director is a publisher or merchant, and thinks it is all right to resort to commercial methods, thus reducing the methods of an humane profession to a trade basis.

The endowments in many of our old hospitals are enormous. Many of them are very proud and aristocratic institutions. In some of them the staff hesitates to affiliate with the common herd. They want the material; admit the material, if it is what they want,without a question; exclude the chronics; and rob systematically the young practitioner struggling for a footing. Public hospitals are intended for the destitute and poor only, not to rob a worthy profession. This is a partnership irregularity. I am not surprised at some good specialists strongly urging "from house to house" work in the specialties. They have but little difficulty in sustaining their position, as results have always been best in private. While alluding to the trials of the young practitioner, I want to condemn the cheap room so freely offered by hospitals. It is a wholesale robbery of our noble nurse profession. I find all over the country splendidly appointed hospitals offering nicely furnished rooms at eight, ten, and twelve dollars per week, when the directors and staff know perfectly well that it costs fourteen or sixteen dollars a week to take good care of a patient. Again, a nurse has served the hospital faithfully for three years without reward; when she demands for her valuable service in private, twenty-one and twenty-five dollars per week, the patients laugh at her. I might mention more hospital and professional irregularities.

I am fond of hospitals and convinced that they should all be practical schools; that they should all be used wisely and humanely for educational purposes, first, as a practical clinical school for physicians where they may serve a clinical apprenticeship to a finish, and second, where nurses may be trained for three years.

DISCUSSION.

Dr. E. B. Heckel thinks the division of fees is wrong. Medical schools should instruct their students in ethics, and, owing to the lack of proper instruction along these lines, a young physician often meets conditions with which he is sorely tried beause of his ignorance concerning the proper course to pursue. Reprints are all right if not stacked on the office table.

We should make a business of the practice of medicine and every physician will succeed who attends strictly to his business and shrinks from nothing along the line of legitimate work which comes in his path.

Dr. A. L. Lewin thinks that the contract surgeon is a danger to the patient and a menace to the public. The power of a few men which enables them to hold positions on the staffs of several hospitals is a great injury to the profession, as it often prevents the development of good young men who might become capable with the proper experience and training.

Dr. Adolph Koenig believes that corporations have their right, and that they are compelled to protect themselves by employing skilled surgeons, and that any young man has a perfect right to sell his services if he desires.

Dr. Price, in closing, hoped it is true that abortionists are comparatively few in Pittsburg. He thinks that there are many in Philadelphia. It is our duty if possible to always advise against malpractitioners. We should charge full fees among the rich and thus be more at liberty for charity work to the poor. All hospitals should be clinics. They should have large staffs, and no salaried staff officers should exist. State boards should be abolished.

AN OFFICE CALL.

Teacher—Tommy, something has got to be done about your behavior. I think to-day after school I shall call and see your father.

Tommy—It'll cost you $2 if you do. Pop's a doctor; office hours, 5 to 7.—*Puck.*

A CASE OF CONJOINED TWINS COMPLICATING LABOR IN A PATIENT WITH MULTIPLE UTERINE FIBROMATA, WITH EXHIBITION OF SPECIMENS.

BY CHARLES E. ZIEGLER, M. D.,
Pittsburg.

At seven o'clock on the morning of January 9, 1906, I was called by telephone to a patient in labor whom I had never seen and who was referred to me by Dr. P. J. Eaton. It is to Dr. Eaton, therefore, that I am indebted for the rare and interesting case which I am about to report to you.

The patient, Mrs. B., a primipara, aged thirty-three years, was married two years previously and menstruated for the last time on May 29, 1905, being pregnant, therefore, just two hundred and twenty-five days. Menstruation, which was established at the age of thirteen, had always been regular every twenty-eight days, was profuse, lasting a full week, and until seven or eight years ago was also very painful. No change in the character of the menstruation had been observed during the past two years.

Four sisters of the patient have each had one child and each was delivered prematurely, three at the end of seven months and the fourth at six and one half months, showing a family tendency in this direction. The maternal grandfather was a twin as was also the paternal grandmother. One sister has uterine fibromata. These facts are important in the case.

The patient was nauseated from the beginning and was very uncomfortable until October when she almost aborted. Since October she has been free from nausea and has been in comparatively good health, has had bearing down pains and sharp pains in lower abdomen and pelvis, both much relieved by supporting the abdomen with the hands. She has also been very constipated during the latter part of pregnancy.

On Sunday night, January 7, after being in bed a short time, water began trickling from the vagina and continued all day Monday, the patient remaining in bed. Shortly past midnight, January 9, while asleep in bed, the membranes ruptured with a gush, the bed being literally soaked. At 1 A. M. the pains began and continued regularly, growing stronger until I arrived at 7 A. M.

Examination. Patient is a large, well developed woman, weighing about one hundred and seventy-five pounds. Heart and lungs normal. Abdomen very large and containing a great deal of fat; circumference one hundred and five centimeters, distances from umbilicus to xiphoid and symphysis being respectively twenty and twenty-two centimeters. The intestines were filled with gas and it was difficult to palpate the contents of the uterus. The fundus was half way between the umbilicus and xiphoid; a back was detected to the right, and in the fundus two round, hard masses were distinctly felt which I felt certain were two heads. From the subsequent history of the case, however, I am even now not at all sure that what I felt were heads, the patient having multiple uterine fibromata. Heart sounds, numbering one hundred and forty-eight beats to the minute, were heard to the right and on a level with the umbilicus. Heart sounds of a different rate and character could not be detected elsewhere even after repeated auscultations. Deep pressure back of the symphysis, in the usual manner, showed the pelvis to be empty.

Vaginal Examination. Perineum short; introitus closed, moderately wide and quite dilatable; vagina roomy; vaginal walls smooth and covered with profuse secretion; sacrum well hollowed out; external os somewhat larger than a half dollar, well thinned out and very dilatable. Within the os two feet were presenting. By traction upon a foot it was readily determined from the presenting feet that the back lay to the right. The anterior foot, the right, was therefore grasped and pulled well down into the vulva. This procedure gave the patient immediate relief, so that the pains, which had previously been almost constant and unbearable, were now borne with comparative comfort, remaining, however, strong, recurring every three or four minutes and lasting fully three fourths of a minute. This condition continued for two and a half hours, when the pains suddenly became more severe and strongly expulsive in character. A second examination showed the os to be fully dilated, but the fetus, in spite of the character of the pains, was just as high within the uterus as at the previous examination. As the fetal heart sounds were now weak and very rapid (one hundred and eighty) I decided to extract what was apparently a small child. The patient was placed across the bed with the buttocks over the edge in the usual manner, and, as she was very nervous and offered great resistance to all manipulation, chloroform was administered by Dr. J. K. Everhart. After gentle traction for half an hour, I was unable, even with force, to extract beyond the hips. The cord had ceased pulsating and I decided to explore the uterus. All the liquor amnii had flowed off and the walls of the uterus were so firmly contracted about its contents, that it was only with the greatest difficulty that I finally succeeded in reaching the fundus with my right hand. Here I discovered a double headed monster with a single body, but beyond this I was absolutely unable to determine anything. It was now evident that a major obstetrical operation would be necessary and the patient was returned to bed to await the preparation.

At 2 P. M. she was again anesthetized by Dr. Everhart and placed upon an improvised operating table. The vulva was shaved, the vulva and vagina were thoroughly scrubbed and disinfected, and, with the assistance of Dr. L. W. Smith, I proceeded to a second attempt at extraction. During the preparation the pains became almost tetanic in character and the os had recontracted firmly about the abdomen of the partially extracted child. The os was manually dilated, requiring fully an hour. The abdomen of the fetus was opened and eviscerated. In this way I again secured sufficient room to pass my hand into the uterus alongside the eviscerated abdomen, and grasped and extracted two more feet. Delivery was now rapidly and easily accomplished in the following order: chest, left posterior arm, left anterior arm, right anterior arm, and right posterior arm, right head, left head, both occiputs posterior. There was no laceration of the maternal soft parts; the placenta followed spontaneously in ten minutes; the uterus was well contracted and there was no bleeding. The puerperium was normal, the temperature never going above 99 degrees and the pulse never above 80.

Following the delivery of the placenta, a central notched condition of the fundus was noted which was thought to be that of a uterus arcuatus, and no further attention was given to it. During the first four days of the puerperium there was so much tympanites that it was hard to follow the involution of the uterus and it was not until the fifth day after delivery, when I succeeded in getting an empty bowel for the first time, that anything abnormal was discovered. A large, round, hard mass was easily distinguished on the right side and extending from Poupart's ligament to within a few inches of the umbilicus. This was at first taken to be the uterus, and the deflection to the right was supposed to be due to a distended bladder, so common during the early days of the puerperium. A catheter was passed, but little urine was obtained and the mass remained the same. I then suspected fibroids and this suspicion was verified by a bimanual examination on the tenth day. Dr. Blume, who saw the patient several weeks later, concurred in the diagnosis. She was operated upon in the Allegheny General Hospital on May 24, 1906, and six subperitoneal fibroids were enucleated. She made a good recovery, leaving the hospital at the end of four weeks, has since menstruated regularly and is now in excellent health.

According to Dr. E. W. Willetts, to whom I am indebted for the autopsy and upon whose report the following description is based, the specimen belongs to the class of double monsters known as omphalopagus and is more specifically named a thoracogastrodidymus—meaning simply a double monster having common abdominal and chest cavities. The twins are both of the female sex, weigh eight pounds, the left being forty, the right thirty-eight centimeters long. There are two distinct bodies, having separate and well developed heads and extremities. The bodies are united from the umbilicus, common to both, to a point on a level with the superior borders of the thyroid cartilages. The union is between the internal antero-lateral aspects of the upper abdomens and chests. The distance between the acromion processes of the anterior scapulæ is ten centimeters and of the posterior, four centimeters; thus, the anterior aspect of the chest is wider than the posterior and the faces are turned anteriorly and slightly toward the median line. The formation of the bony chest wall is most interesting. The costal margins of the anterior or left ribs of the left body are joined by a well formed sternum to the costal margins of the anterior or right ribs of the right body. The same formation also exists posteriorly, so that there are two sterni forming the bonds of union between the two bodies.

The abdominal and chest cavities are common to both and are separated by a common diaphragm.

The relations of the internal organs were, of course, partially destroyed by the evisceration and, unfortunately through confusion in the family and in my anxiety to get possession of the specimen, the eviscerated organs of the right body, except the heart, were forgotten and destroyed. There were, however, two sets of lungs, two hearts, the right much enlarged, the left rudimentary; there were two abdominal aortas, two stomachs, two sets of intestines with perforate ani; two sets of kidneys, and two well developed uteri. The tubes, ovaries and broad ligaments of the left body are well developed, those of the right being rudimentary. There are two separate and well developed spinal columns and pelves.

In looking up the literature upon the subject one is surprised to learn that human monstrosities in one form or another are by no means uncommon. The subject is therefore not only one of great interest but of considerable practical value as well.

Some two weeks ago, Dr. W. J. Langfitt of Allegheny secured from a midwife a double monstrosity very similar to my own. This specimen is now in the possession of Dr. James Witherspoon. I had the pleasure of being present when the Doctor performed the autopsy on Friday of last week and through his courtesy am able to report his findings and exhibit the specimen. It weighs six pounds, one ounce, is thirty-eight centimeters long, and of the male sex. It belongs to the class known as cephalothoracopagus; that is, a double fetal monstrosity in which the twins are united by the upper abdomens, chests and faces, the spinal columns and pelves being quite distinct. It differs externally from my own specimens only in having the faces united, the formation of the bony chest wall being exactly the same,—two sterni forming the bonds of union.

The faces are united by their internal lateral aspects. On the posterior surface of the conjoined heads are found the right ear of the left body and the left ear of the right body with their anterior margins in close apposition. On the external lateral aspects of the conjoined heads are situated the left ear of the left body and the right ear of the right body. On the anterior surface are the left eye of the left body and the right eye of the right body, closely placed and separated by a rudimentary nose. Below the nose is a small but well formed mouth. The abdominal and chest cavities are common to both and are separated by a common diaphragm. There are two sets of lungs, two well developed hearts, about equal in size, the anterior belonging to the left body, the posterior to the right body. There are two thoracic and two abdominal aortas, two sets of kidneys, and two bladders. The liver of the right body is much enlarged, that of the left very rudimentary. There is one esophagus and one stomach. The small intestine is single for the first seven eights of its length, after which it bifurcates, one branch of the bifurcation going to join the large intestine of the right body, the other to that of the left body. The large intestines are normal, each terminating in a patulous rectum. There are two well developed, normally situated vermiform appendices. The genitalia are normal, the four testicles being located respectively at the four intestinal abdominal rings—just what we would expect to find from the age of the specimen (not eight months).

The third monstrosity which I shall describe and exhibit was delivered in 1902 by Dr. P. T. B. Shaffer of Elizabeth, Pa. It is that of a dicephalous monster with two sets of arms, the internal being fused as far as the wrists, single abdominal and chest cavities, two separate spinal columns, a fused pelvis and one pair of legs. We have no autopsy report.

The question, however, of practical importance to us is how are double monsters best delivered. Veit, in an elaborate paper on monstrosities, states that of one hundred and twenty-nine cases of double monsters, collected from the literature, only eighteen required obstetric aid, while Playfair in citing thirty-one cases found spontaneous delivery in twelve cases. There is, of course, a great disparity between these statistics, but they at least serve to show that fully forty per cent. of double monsters require no aid in delivery, and should teach great conservatism in the treatment of these cases. Hirst states that "the fact that spontaneous delivery occurs in so many cases, one reason for which is that labor is often premature, teaches the obstetrician not to be in haste to intervene" and that "the difficulty in many instances of knowing before delivery the kind of monstrosity, will make him then cautious in the mode of intervention," and further that "the Cesarean operation is neither indicated nor justifiable in the delivery of a monstrosity."

Where delivery is not spontaneous, the method to be employed will depend upon the nature of the monstrosity, if this can be determined, and upon its position and presentation. When the fetuses are joined in a straight line or can be so placed, spontaneous delivery is most likely; if interference is necessary extraction is not difficult whether the forceps or extraction by the presenting part is used. Examples are union by the tops of the head, or craniopagus; union by the buttocks, or ischiopagus.

Where there is a double face, diprosopus, it may be mistaken for hydrocephalus, the distinction being that in the former there are more sutures, while in the latter the sutures are wider, the bones thinner and more flexible and the rounding of the angles more marked (Hirst). There is the same danger of rupture of the uterus in each. Podalic version and the forceps are contraindicated.

Perforation and the cephalotribe or cranioclast should alone be used.

In case of a monocephalous monster with double abdomens and lower extremities, spontaneous delivery is the rule if the head presents; if the feet come first delivery may or may not be spontaneous. If extraction is necessary all four feet must be extracted together.

In a case of a cephalothoracopagus, as in Dr. Witherspoon's case above reported, spontaneous delivery may also occur, especially in vertex presentations. In illustration of this was Dr. Sterley's case which was delivered spontaneously on Feb. 23, 1878 in Elk County, Pa., and is almost an exact duplicate of Dr. Witherspoon's case.

In case of a simple dicephalous monster, Dr. Shaffer's case, we have already learned the mode of delivery when the feet present. When the heads present, version should be done, if possible, and the delivery completed by Dr. Shaffer's method. If version is not possible, decapitation of the first head, followed by forceps on the other head should be done, or if the second head is still above the pelvic brim and can not be pressed into the pelvis, it will be better to wait for spontaneous delivery or until the head can be grasped with the forceps with safety.

In cases of pygopagus— or union by the lower part of the spine or dorsal surface of the buttocks, spontaneous delivery also occurs as is instanced by the case of the famous Hungarian sisters, Helen and Judith, born alive in 1701, and who lived to the age of twenty-two.

The most noted example of xiphopagus or union by the xiphoid cartilages is the famous Siamese twins born in 1811.

DISCUSSION.

Dr. Sanes, in discussing the paper of Dr. Ziegler, said that he thought the lives of these children should be saved if possible. Cesarean section might sometimes be indicated.

Dr. Todd has had no cases of monstrosities but knows of no complications in delivery so difficult as a fibroid when located low down in the pelvis.

OCTOBER EXECUTIVE MEETING OF THE ALLEGHENY COUNTY MEDICAL SOCIETY.

The regular quarterly business meeting of the Allegheny County Medical Society was held in Dispensary Hall, Pittsburg, October 9, 1906, with the President, Dr. E. W. Day, in the chair.

The minutes of the April and July executive meetings were approved, such action on the minutes of the April meeting having been postponed until the actual date of the resignation of Dr. C. H. Hitzrot be ascertained. This resignation came before the Society after charges had been preferred before the Board of Censors; hence the report of the Board of Censors was accepted.

Dr. W. S. Foster, for the Committee on California Physicians' Relief, reported that $808.00 (including $25.00 from Washington County Society, and $50.00 from the Chartiers S. and P. Association) had passed through the hands of the committee's treasurer, Dr. W. B. Ewing. This report was received, and, by unanimous vote, the committee was discharged with the thanks of the Society.

The Board of Censors recommended seven persons for membership in the Society: Drs. John S. Kelso (transfer), F. A. Harting, F. M. Schrack, W. H. Rodgers, W. S. McCausland, E. F. Waller, O. B. Steinmetz, several names being withheld because of stenographical errors. The above mentioned were all elected to membership in this Society, Dr. J. R. McCurdy and Dr. J. M. Thorne acting as tellers.

A motion prevailed and it was "*Resolved*, That we heartily endorse the project for the establishment of a general municipal hospital, and that a committee of fifteen be appointed to confer with His Honor, the Mayor of Pittsburg, and the constituted authorities, and offer our assistance for the furtherance of this project."

The President announced the appointment of the following nominating committee to report at the January Executive Meeting: Drs. A. Pettit, J. S. Mabon, W. W. Jones, O. C. Gaub, C. O. Anderson, W. J. McAdams, J. P. Kerr, G. M. Kelly J. M. McCready. As a committee to audit the Treasurer's books, Dr. Day appointed Drs. J. W. Macfarlane, J. C. Burt and T. W. Grayson.

Drs. J. H. Silvey, H. S. Maxwell, and C. C. Croft, members elect, were present and signed the Constitution before the meeting was, on motion, adjourned.

OCTOBER SCIENTIFIC MEETING OF THE ALLEGHENY COUNTY MEDICAL SOCIETY.

The regular Scientific Meeting of the Allegheny County Medical Society was held in the regular place on the evening of October 16. The attendance was unusually large, and the program a most interesting one.

After the reading of the minutes of the previous Scientific Meeting, the following four papers were read:—

"The Value of the Röntgen Ray as a Therapeutic Agent" by Dr. G. E. Pfahler, Philadelphia.

"Results in Röntgen Therapy" by Dr. Charles Lester Leonard, Philadelphia.

"Röntgen Diagnosis in Gastroenterology" (Illustrated by radiograms) by Dr. Henry Hulst, Grand Rapids, Michigan.

"The Röntgen Ray as an Aid in Diagnosis" (Illustrated by lantern slides) by Dr. P. M. Hickey, Detroit, Michigan.

The papers of Dr. Pfahler, Dr. Leonard, and Dr. Hulst appear below; the paper of Dr. Hickey will appear later.

THE VALUE OF THE ROENTGEN RAYS AS A THERAPEUTIC AGENT.

BY G. E. PFAHLER, M. D.,
Philadelphia.

Three questions arise in the mind of the physician when he is considering the Röntgen rays as a therapeutic agent:—

1. What diseases will yield to Röntgen ray treatment?

2. What will be the result in a particular patient under consideration?

3. How shall the patient obtain this treatment?

All of these questions are difficult to answer because of varying conditions. In general, the Röntgen rays have been found most useful in the chronic diseases—those in which other methods of treatment have been more or less of a failure, so that the stereotyped expression, "Since everything else has failed, let us try the Röntgen rays" has become almost universal. We have, however, reached a stage in this line of treatment when this expression should be changed to "Since other methods will fail, let us try the Röntgen rays at once." When this attitude has been reached, then we will get patients before they have lost all of their vitality, before they have become weak, emaciated, and decrepit, or septic.

It would be tiresome and profitless for me to name all of the diseases in which the rays have been tried, and then to estimate their value in each disease, for there are probably no chronic diseases in which they have not been used. I shall, therefore, mention only the most common diseases, and only those in which we have had enough experience to draw some definite conclusions. I shall present only conclusions, and then illustrate with a few lantern slides for the purpose of arousing discussion.

CHRONIC DISEASES OF THE SKIN AND ITS APPENDAGES.

Hypertrichosis can be treated with success. There will be some recurrence however, and the growth of hair will have to be removed two or three times. There is some danger of atrophy of the skin; therefore only the patients who have an extensive growth should be treated by this method. In these cases there is probably no better method, for all cases do not have atrophy, and even slight atrophy is preferable to the extensive growth of hair.

Acne Vulgaris. Here we obtain some of our most beautiful results, and the patients are universally grateful. The papules and pustules disappear, and even the scars fade to a considerable extent. In a few cases there will be a slight recurrence, but this is easily controlled. The rays lessen the tendency to the production of pus in the skin, cause an atrophy of the glands of the skin and in this way bring about a cure. I have had good results after from four to twenty treatments, and in from three to six months. Therefore, after the simpler local measures have failed, and after the general health has been investigated, all of the chronic cases should be treated with the rays.

Acne rosacea gives, I think, equally good results, but when the nose is involved and is associated with some hypertrophy, and an increased vascularity, the dilated vessels will remain, but these can then be removed by electrolysis. The hypertrophy is in great part reduced, so that it is, as a whole, I believe, the best form of treatment.

Sycosis. In this disease, as in acne, the rays lessen the tendency to the production of pus and cause an atrophy of the glands of the skin. The treatment must be carried to the point of producing a distinct erythema and loss of hair, after which very good results are obtained.

Chronic eczema yields most beautifully. Sometimes the itching is relieved by the first treatment, but at other times the itching disappears with the disease, which usually requires from two to three months, and from ten to twenty treatments.

Psoriasis. The patches of psoriasis usually require from six to twelve treatments, and disappear in from one to two months. Recurrences are likely, but these as a rule yield nicely to the rays.

Lupus Vulgaris. Most cases of this disease will yield to the Röntgen rays. Some cases will require a long course of treatment extending over months, but this is not long as compared with the usual duration of the disease even before coming under treatment, and, as a whole, better cosmetic and more permanent results will be obtained than by any other method. As a rule the treatment must be carried to the point of producing a dermatitis.

Tubercular ulcers will usually yield to the rays when all other methods have failed.

Tubercular Glands. In early cases, the Röntgen treatment should be the method of selection. If the disease has extended to the point of producing localized tenderness or suppuration, then the softened gland should be incised. The whole area of glands should not be removed, but should be at once subjected to treatment with the Röntgen rays, and in practically all cases the glands will disappear, without scarring and with little or no tendency to recurrence.

MALIGNANT DISEASE.

Epitheliomata or Carcinomata of the Skin. In this field, above all others, have the rays demonstrated their great value. The results have at times been most wonderful. In practically all cases of epithelioma, if treated early, the rays will cause a disappearance of the growth, without pain, and often without a scar. As to permanency, I have never seen nor heard of a recurrence in a case that was treated early, before the deeper tissues were involved. In this disease, therefore, it is the duty of the physician to treat first with the rays and not to wait until after other methods have failed, and after there has been recurrence and glandular involvement. Even in these later stages we often get good results, but the chances have been materially lessened, and the amount of treatment required has been infinitely increased. If an epithelioma is treated early it should yield to from three to twelve treatments, and in from two to three months. If treated late, after other methods have failed, we may still hope for relief of pain, some improvement, and at times disappearance of the growth, but both the course of treatment and the tendency to recurrence are proportionately increased.

Carcinoma of the Breast. Comparatively few cases of primary carcinoma of the breast have been treated by the rays, and only those that have been inoperable, or in patients who have absolutely refused operation. Personally I have only treated five cases. Three of these patients were seventy-four, seventy-nine and eighty-four years of age respectively. All three had heart disease. Two of these have been symptomatically well for three years. In both, the mass seemed to be partially replaced by fibrous tissue. The third patient had repeatedly had severe hemorrhages, and was not expected to live over two months when I started treatment. She lived three years and died of pneumonia. The growth had been reduced to about one half of its original size, but at no time did we expect her to get well. She lived, however, in comparative comfort. The fourth patient was a young woman of forty-two, who refused operation. She has been well three years. The fifth patient is a woman of fifty-five who has absolutely refused operation. She is still under treatment and there is every indication that she will recover. These cases will be reported in detail when sufficient time has elapsed to draw accurate conclusions.

The results to date will compare favorably with those obtained by any other method. I always have and still do recommend operation where it is at all practical, but with improved technic and more favorable cases we may change our views in the near future.

Secondary Carcinoma of the Breast. If these cases are referred early at the first sign of recurrence, the chances for recovery are very good. The longer the recurrence is allowed to grow and the more extensive it becomes, the less will be the chances for recovery. Surely in this class of cases no other method of treatment will bear comparison. Every Röntgenologist who has had much experience has treated cases that have been operated upon repeatedly and the recurrence finally develops before the wound has healed. It is a great pleasure in these cases to see the nodules melt away and leave no trace. I have cases of recurrent carcinoma of the breast that have been well for years.

Postoperative Treatment for Carcinoma of the Breast. The time is too short to express any positive opinion upon this subject. I believe that it is the ideal method of treatment, but this opinion is based chiefly upon circumstantial evidence or theory. We reason that, since recurrences develop from carcinoma cells which have likely been left behind from the operation, and since palpable recurrent nodules will disappear under the Röntgen rays, if these rays are applied before the cells have had time to grow or reproduce their kind they are more easily destroyed. It is difficult to decide how much treatment is necessary in these cases.

Postoperative treatment will not prevent all cases from developing recurrences, for I have seen one case develop a recurrence while under treatment. The time given for the preparation of this paper has been too short to allow me to collect all of my cases of this class and determine their present status, but it is likely that I would have heard of other cases if there had been any. Therefore I feel that all cases of carcinoma of the breast should have postoperative treatment.

In the treatment of other deep-seated affections, we are not yet able to draw definite conclusions, therefore I leave those of you who are especially interested to read the special case reports.

The second question heading this paper—How much benefit will be derived from the Röntgen treatment in an individual case?—is best answered by a careful consultation of the family physician with a reliable, broad minded, and conscientious Röntgenologist and together they must consider the duration of the disease, its virulency, its location and extent, together with the patient's general health and vitality. In this way the opinion of the family physician, based upon his knowledge of the patient's general history and condition combined with the opinion of the Röntgenologist based upon his experience with similar cases and his general knowledge of the principles of Röntgen therapy will establish the most accurate prognosis possible.

The third question—How shall the patient obtain this treatment?—is rather difficult to answer because of varying circumstances, but in general the patient should be referred to a careful and competent Röntgenologist, who has had a wide experience in Röntgen therapy, and not to a man who simply has an "*x*-ray machine." An *x*-ray machine is a mere instrument just as the knife is the surgeon's instrument, and the rays are capable of doing more harm than a surgeon's knife, for the effect of the rays are not shown immediately.

I believe that few general practitioners or surgeons are competent to get the best results from the Röntgen rays. The requirements of their general work will not allow the time nor the opportunity to keep up with the most modern technic. Neither can a man afford to keep up a modern equipment, who for its support depends upon an occasional case. Much experience is necessary to enable the Röntgenologist to vary his technic and dosage from time to time to meet the varying conditions in the disease under treatment.

The rays are capable of much harm and should no longer be looked upon as a mere plaything. No one knows this better than the Röntgenologist who has been most enthusiastic in his work, and who has suffered most from the ill effects.

RESULTS IN ROENTGEN THERAPY.

BY CHARLES LESTER LEONARD, A. M., M. D.,
Philadelphia.

Clinical results, as compared with other methods and agents, are the standard by which any new method or agent is finally judged. Each passes through a series of reports, pro and con, before it establishes itself by this final test. Many remedies have fallen far short of what was expected of them. Many have fallen altogether out of sight. As often happens in the early enthusiasm of a new discovery, hyperenthusiasm and a lack of scientific observation and judgment lead to extravagant claims. An agent like the Röntgen rays, at the same time mysterious and yet powerful in its action, tends to produce exaggeration and readily lends itself to the selfish exploitation of quacks and charlatans.

Much has been claimed and much attempted by those who had neither knowledge nor skill to apply this agent, or to appreciate the good results or failures they produced. Many reputable physicians have been beguiled into believing that they could produce good results, without giving the subject the necessary time and study, if they possessed a machine.

The failures resulting under such circumstances can not be attributed to inefficiency in the agent or the method, and yet many of the failures to cure what are demonstrated to be curable conditions, have been due to such causes. They are not reasons why this agent should be discredited or depreciated, or its study and employment abandoned by ethical practitioners.

It is undoubtedly a powerful therapeutic agent, which has its place in legitimate therapy and must be developed along scientific lines to attain its true value. It has only a place in therapeutics, and must be used in conjunction with other known remedies and methods to attain the best results, each being given that importance which experience in the conditions to be dealt with indicates.

There is possibly an optimism among Röntgenologists that lends credence to the supposition that they consider this remedy a panacea. Their willingness to attempt to relieve suffering or to try this new remedy in chronic and rebellious cases, would tend to indicate this. It has served to saddle the Röntgen method with the failures and mortality that belonged to inefficient agents and methods previously employed. There is a rational excuse for this optimism and readiness to try this new remedy in varied fields, and it is not as irrational as might at first appear. The Röntgen rays do not act through systemic absorption; they act in a purely local manner, stimulating the metabolism of the part treated and assisting nature to combat the disease by increasing the activity of normal cells, while decreasing the vitality of pathologic tissues. Since this action is purely a stimulant and adjuvant to the natural processes of resistance and repair, it is difficult to limit the scope of its application. Röntgen therapy is therefore not to be charged with all the failures in cases where it has not been primarily employed. It would be very difficult to determine what percentage of these failures were due to inefficient Röntgen treatment, to the stage of the disease when submitted to treatment, or to the inefficient remedies or operations that had preceded it. The factor of inefficient Röntgen treatment is one that covers a large percentage of failures, and is difficult to deal with where so new a method is concerned. Reports that emanate from inexperienced operators receive as much credence as those of the expert, and the medical public has no way to differentiate the expert's opinion from that of the novice.

It is very important that the profession learn to judge and evaluate these reports, for not only is the Röntgen method injured thereby, but the safety of patients placed in inexperienced hands is also endangered.

The greater credence is always given to reports which chronicle failures. The scientific reporter is willing to report his failures as well as his successes. The ability rather than the veracity of a reporter should be questioned in a series of cases where his results fall far short of others of known veracity and standing.

In a method in which technic is so important and yet so difficult to attain, each success far outweighs many failures, because it shows that the method and agent, when properly employed, are capable of producing satisfactory results and that the failures are therefore due to defective technic or lack of knowledge in its employment. The results of Röntgen therapy must therefore be judged by the successes that have been attained in its employment.

As has been said above, it is of the utmost importance that the medical public learn to judge of the men competent to employ this agent therapeutically if they would place their patients in safe and efficient hands for treatment. This method has been employed successfully for over a decade for diagnostic and therapeutic purposes and there are those in every community who have demonstrated by their results their ability to employ it with special accuracy and efficiency. It is no longer necessary to entrust its employment to inexperienced hospital residents or unqualified electricians and manufacturers.

Its use by such persons for diagnostic and therapeutic purposes has been shown to be not only inefficient and inaccurate, but often also very dangerous. This has recently been shown very conclusively by the work of Edsall who says of it that "it is undoubtedly the most violent known agent for therapeutic purposes and this demonstrates both great possibilities for good and great potentialities for harm." This warning given out by Edsall, as the result of his investigations into the effect of this agent upon metabolism, has frequently been misquoted to mean that Röntgen ray applications are always dangerous and that more than ordinary care should be used in recommending or employing them. The danger he sees and is warning against is only in cases where the excretory and eliminating organs are pathologic and incapable of caring for the products of increased metabolism resulting from effective Röntgen treatment. His observations have shown that "one exposure, even, may double the metabolic output in the next few hours; and, clearly, the necessity for metabolizing and excreting such an amount of destroyed tissue must be dangerous in a good many instances."

It undoubtedly would be dangerous in cases where the excretory organs are the seat of disease; careful examinations for such defects should be made before referring any case for treatment, and a report should be made of the findings. It is, however, of more importance that the patient be referred to a Röntgenologist whose education and experience fit him to judge of the effects produced on metabolism and how to guard against and combat them.

Every Röntgenologist of experience has broken down masses of malignant disease that have necessarily been absorbed and has seen the effects of increased metabolism and the resulting toxic condition which will even put a patient to bed. He had recognized the danger long before the careful work of Edsall showed the increased metabolic output in the excreta. He had learned to employ this condition as a sign of efficient dosage, *i. e.*, that pathologic tissue was being destroyed, metabolism increased, and as a warning that treatment must be suspended till the system recovered its equilibrium. The cases cited by Edsall are chiefly those of gouty and arthritic subjects, where the excretory and metabolic functions are commonly disordered. The increased stimulation of metabolism would undoubtedly throw a heavy load upon the kidneys with a possibility of an overload. Such conditions should be treated with the utmost care. An illustration of a favorable result in such a case was that of the wife of a prominent Philadelphia physician. She had been suffering for two years with a painful, gouty and neuralgic condition of the jaws, with loosened and tender teeth precluding the use of solid food. Three mild treatments resulted in a uric acid crisis which put her in bed. When she recovered, the tenderness in the teeth had nearly gone and a few careful treatments sufficed to effect a cure.

The results in somewhat analogous conditions of neuralgia were reported by me at length before the Philadelphia Neurological Society. I was led to the employment of this method in neuralgias by the relief afforded from pain in cases of malignant disease. My results since that time have been as successful, though not uniformly so. The reason for the variation in effect has not been determined but may find its explanation in the causal factor; the neuralgias due to faulty metabolism being those to yield. Severe cases of tic, migraine and persistent neuritis have been among those to yield so far permanent results for from one to three years.

The result in superficial lesions, the chronic and relapsing cases of skin disease, you have probably had demonstrated to you, until you know where to send them for relief. The more you have this method employed in the earlier stages, the more you will appreciate it.

Of the results in the deeper seated lesions of malignant and glandular disease I wish to speak more at length. Particularly as the surgeons have recently demonstrated the efficiency of treatment in complaining of the increased difficulties which they find in operating after thorough Röntgen treatment. In a paper in the June issue of *American Medicine* I briefly discussed the findings and reports of cases, made before the Philadelphia Academy of Surgery. It was there shown that it had been clinically demonstrated that the conclusions of Röntgen experimenters, as to the degree of susceptibility of various structures, was correct; that is, that the lymphadenoid or tissues of low vitality are first affected by the rays. All the clinical reports showed that, in cases of tubercular adenitis and malignant mammary disease that had been treated by Röntgen rays previous to the operation, the lymphatic channels were found to be converted into solid cords, and that these cords rendered operation more difficult.

One result clearly demonstrated, therefore, of Röntgen treatment is the conversion of the lymphatic channels "into solid cords." This destruction of the lymphatics means the isolation of the foci of disease, the destruction of the paths through which metastasis or the spread of the disease could take place. What more can we ask than the localizing of disease whose danger lies in its spreading through lymphatic channels? What more forcible demonstration of results than these reported clinically and unanimously by surgeons? In the presence of such unsought testimony, who can doubt the propriety of at least ante-operative treatment by the Röntgen method as a preparatory measure. If, as stated in the case then reported, twenty-eight treatments will convert the lymphatic channels into solid cords, should not every case be submitted to an effective course of such treatment before operation? The operation does not destroy the lymphatics and, in the vast majority of cases, metastasis and recurrence follow operation. And we might further add if Röntgen treatment will destroy the channels for infection and localize the disease, what is the need for extensive operation?

Finally, the palliative value can not be overlooked. Malignant disease too frequently comes for treatment too late, or incomplete operation results in recurrence. In fact, cures by whatever means are only too rare. The value of a method which certainly retards the progress of the disease, prevents external ulceration and relieves pain is undoubted. To every patient suffering from inoperable malignant disease this agent offers palliation that can not be ignored.

I have not attempted to enter into a detailed statement of cases and conditions in which results justify the value placed upon the Röntgen ray as a therapeutic agent.

I have pointed out the facts that the good results only are a criterion of the efficiency of a new method and that they are to be compared with those obtained by other methods; that *a priori* we should expect such results as are obtained, because the rays have been shown to produce a marked increase, and even to double metabolic activity; that it is therefore one of the most powerful therapeutic agents that we possess and must be administered with caution and only by those educated and competent to observe its physiologic action. I have pointed out the confirmation of experimental studies by clinical experience, demonstrating that this agent acts primarily upon the lymphatics, destroying them first and localizing the disease, preventing any spread or metastasis: a demonstration that makes it essential that every patient suffering from a disease which spreads by the lymphatics should be subjected to a series of ante-operative treatments, if indeed operation is necessary.

I have finally pointed out the very valuable service which this agent renders as a palliative and how it lengthens life and alleviates suffering in those malignant diseases in which the term cure seems justified, only after the patient's death from some other cause, and where the actual mortality is living evidence of our scientific ignorance.

DISCUSSION.

The papers of Dr. Pfahler and Dr. Leonard, being both upon the therapeutic use of the *x*-ray, were discussed together.

Dr. G. C. Johnston stated that the curvative action of the ray was beautifully shown in the treatment of tubercular glands. When such glands are threatening to suppurate they should be incised and the operation followed by treatment with the ray. He called attention to the value of ante-operative *x*-ray treatment in malignant conditions, and stated that the reason many *x*-ray operators become skeptical as to the value of surgical measures in malignancy is that they see only the unsuccessful results,—those in which operation has been followed by inoperable recurrence.

In conclusion he thought it advisable to show the society what the actual value of the rays, as a therapeutic agent, is, and exhibited a number of lantern slides, illustrative of the various skin lesions and malignant conditions before and after being subjected to therapeutic dosage of *x*-ray. Many of these patients had remained well for periods exceeding four years. Among them were cases of epithelioma, carcinoma, lupus and sarcoma.

Dr. R. H. Boggs said that in order to produce uniform results it was absolutely necessary to be familiar with the quality and quantity of the rays given off from a tube. When the Röntgenologist began to do radiography, it was with difficulty that he was able to make pictures of the hand and thinner parts; while now the operator familiar with the quality and quantity of the rays is able to produce uniform radiographs of all parts of the body. The same is true of radiotherapy, as it is necessary to study the rays and know the dosage necessary to produce the desired physiological action. Knowing the physiological action of the rays and the pathology of the disease, the Röntgenologist can determine in many instances when the rays are indicated and contraindicated.

All the diseases which Dr. Leonard and Dr. Pfahler have mentioned can be classed under three heads; viz, skin lesions, glandular diseases and malignant diseases. In the first class (skin diseases) brilliant results are known and accepted. The good results in the treatment of glandular diseases, including tubercular glands, goiter, and Hodgkin's disease, are not so universally known, as they have not been treated in such large numbers. The results in goiter and tubercular glands are lasting, and at present the rays are considered one of the most efficient agents we possess in the treatment of these diseases. In Hodgkin's disease the rays have always reduced the size of the glands, in some cases causing an entire disappearance, but in most instances there is a recurrence of the disease a short time after the treatment is discontinued.

Dr. Wm. B. Ewing stated that in the matter of treatment he had obtained similar results from the use of the Röntgen ray, but that his results in the matter of hypertrichosis had not been so favorable as Dr. Pfahler's. He had good results in about fifty per cent. of the cases that he had treated, ten per cent. had been only fairly successful and forty per cent. had been practically failures.

Dr. C. C. Hersman asked for more information as to the results in tic douloureux.

Dr. Pfahler, in closing, said in answer to an inquiry, that he had treated seven or eight cases of rheumatoid arthritis. He had had no bad results. In one case the high frequency current had failed to relieve the pain, but the *x*-ray had done so. In another case an arm moderately affected had been completely restored, while other limbs (remaining untreated for control purposes) had become worse. He had even gotten favorable results from this mode of treatment in cases of neuralgia.

Dr. Leonard in closing wished to emphasize the fact that *superficial* epitheliomata are the ones cured by *x*-rays. As regards cures in cases of cancer, no more positive claims are made for this mode of treatment than for surgery. He has had some good results in treating arthritis deformans, and given relief in tic douloureux. This agent should be used carefully, the doses never being too large.

ROENTGEN DIAGNOSIS IN GASTROENTEROLOGY.

BY HENRY HULST, A. M., M. D.,
Grand Rapids, Michigan.

Dr. Hulst did not read a paper but spoke extemporaneously, and illustrated his remarks with thirty-six large negatives which he demonstrated by means of a negative illumination cabinet.

The speaker's method as developed up to date is a combination of orthodiagraphic fluoroscopy and Röntography. By means of the fluorescing screen the stomach (and colon) can be examined expeditiously with the patient standing or lying down on the back, belly, right or left side, and with the tube placed at various angles so as to look fairly all around these organs. To do this with safety to the observer no precaution should be omitted to screen off the rays. Dr. Hulst described briefly his examination stall to be used in connection with an orthodiagraph for both Röntography and diascopy.

The empty stomach, if normal, collapses, as does the vagina. Usually there is some gas or air in the cephalic end. This air bubble or "magenblase" is the vestibule into which food and drink collect before the lower part of the stomach unfolds. Two negatives showed this "magenblase" with two capsules of bismuth upon its bottom, and seven other capsules which had escaped the "blaze" and landed upon the true bottom of the stomach. These pictures showed how a capsule of bismuth may suffice to determine the lowest point of the greater curvatures of the empty stomach. Various methods of thus utilizing pure bismuth subnitrate and of conducting the examination were described by the speaker, according to the particular information sought in each case.

To make out a possible malignant condition, bismuth in small quantity (one to two drams in four ounces of water) is swallowed by the patient while the observer watches the mixture run down the esophagus and stomach in a black streak and collect along the dependent part of the organ. Cancer nodules in the walls of the stomach have been recognized by means of the fluoroscope by watching the manner in which the streak is deflected, broken up and otherwise altered by the presence of such deposits. The examination of the stomach wall for such abnormalities should be made before the full bismuth meal which obliterates them is given. Although the speaker has given as much as four ounces without bad results, he finds that half an ounce to an ounce is quite sufficient, provided the technic is adequate. The better the technic, the less bismuth is needed.

Among the negatives shown was a series of six pictures of the stomach of a patient taken one immediately after the other. These showed the contour, size, and position of the stomach with the patient lying on the back, on the stomach, on the right and the left sides, standing, and finally standing with the operator's hand pressing against the patient's abdomen, and showing how much this pressure served to shove the stomach upwards and the colon downwards. This series sufficed to prove the necessity of the erect position to bring out the existing ptosis. With the patient standing, the lower border of the stomach was more than a hand-breadth lower than lying on the belly. By placing the patient on the back the stomach gravitates still farther towards the head as the corresponding negative showed clearly, thus illustrating the entire inadequacy of percussion with the patient in this position, as is almost universally practiced.

The position of the normal stomach has been a matter of dispute. The stomach that is in the majority, so to speak, is sometimes spoken of as normal. But this is based on false reasoning. Neither does absence of symptoms directly referable to an organ suffice to prove that it is normal. The most common stomach is hook-shaped. We may call it the civilized stomach, but it is not normal. The speaker noticed early in his investigations that the shape of the body is an index to the location of the internal organs. The *habitus phthisicus* and the *habitus enteroptoticus* are identical. He tried to determine the normal through the beautiful, by assuming that the true, the beautiful, and the good are one as well as three. It may have to be admitted that a saint may be enteroptotic (and they all seem to have been) and yet be a saint.

But Dr. Hulst draws the line at gastroptotic Apollos and enteroptotic Venuses. He showed the pictures of a well-built man, except that he had inversion of the viscera. Thus the stomach was on the right side but it was oblique, not hook-shaped at all; its lowest point was well above the navel. This the speaker presented as the most normal stomach he had seen. "Show me a Venus or an Apollo and I will demonstrate to you a comma-shaped or cowhorn-shaped stomach such as this." The stomach nearest to this in shape and position (among all the women examined by the speaker) was found in a beautifully built girl of fifteen years whose measurements vied with those of the Venus of Milo. The picture of this stomach showed clearly its family relationship, so to speak, to the one just described.

For a more detailed account of this work, the speaker referred to the Proceedings of the American Röntgen Ray Society of 1906 and 1907. The latter volume is about to be printed.

Reports of County Societies.

CARBON—October.

The Carbon County Medical Society met at Lehighton, October 26, in Rebers Hall. President C. J. Kistler occupied the chair, and the members present were Drs. Balliet, Catterson, C. J. and E. H. Kistler, Kutz, Long, Moyer, Reber, Tweedle, and Zern. Visitors: Drs. Edgar M. Green of Easton, W. R. Kistler of Lehighton, and W. A. Brag of Mauch Chunk.

The minutes of the previous meeting were read and approved.

After the reading of a communication from the secretary of the state society, a committee of three were, on motion, appointed to revise the Constitution and By-Laws.

Dr. Edgar M. Green of Easton, being present by invitation, read a paper on "Pneumonia and Its Treatment," which was enjoyed and discussed by the members and visitors present. Dr. Green was given a vote of thanks and was requested to have his paper published.

Dues collected amounted to ten dollars.

After a social time the meeting adjourned to meet at the call of the secretary.

J. B. Tweedle, Reporter.

CUMBERLAND—October.

The regular quarterly meeting of the Cumberland County Medical Society was held in the rooms of the Lemoyne Water Company, Lemoyne, at 6:30 p. m., Tuesday, October 9.

The following were present: Drs. Allen, Bishop, Bowman, Davis, Good, Koons, Langsdorf, Linebaugh, Kisner, Phillipy, Preston, Pilcher, and Smith, and as guests, Drs. Stemm of Lemoyne; Hamilton, Blair, Ellenberger and Strope of Harrisburg; Middleton, Traver and Saul of Steelton. Dr. J. C. Stemm, Lemoyne, and Dr. Henry Bashore, West Fairview, were elected members of the society.

Dr. A. R. Allen, Carlisle, gave an interesting report of the meeting of the Pennsylvania state society.

Dr. Thomas S. Blair, Harrisburg, read a paper on "The Therapeutics of Respiratory Diseases," in which he took an optimistic view of drugs when used strictly within their indications as outlined in detail in his essay. The possible harmful influences of several of the more recent drugs were described and physiological and pathological data were discussed at length in elucidation of his contention that a scientifically accurate employment of remedies will soon cure one of the dominant therapeutic nihilism of the day.

Dr. A. R. Allen, Carlisle, read an exhaustive paper on "The Radical Cure of Hernia," in which he strongly urged operation in all adult cases under fifty, unless there are strong contraindications. Between the ages of fifty and seventy years, operation is advised in patients in good health and in cases in which the rupture is held with difficulty by a truss. Bassini's operation was described in detail and illustrated by drawings.

A vote of thanks was tendered Drs. Blair and Allen for their interesting papers.

After the business meeting a banquet was held at the Hotel Lemoyne.

HILDEGARDE LANGSDORF, Reporter.

DELAWARE—SEPTEMBER, OCTOBER, NOVEMBER.

The regular meeting of the Delaware County Medical Society was held at the Hotel Imperial, Chester, on Thursday, September 20, at 3:30 P. M. Dr. J. L. Forwood presided and Dr. Neufeld acted as secretary *pro tem.*

By special request Dr. D. W. Jefferis gave an interesting report of the meeting of the State Medical Society which was held at Bedford Springs the week previous.

Dr. Thomas C. Stellwagen, Jr., of Media then read a paper on the method and instruments used in the examination of the bladder and catheterization of the ureters. Dr. Stellwagen handled the subject very thoroughly and in an instructive manner.

There was a large attendance, the following being present: Drs. Baker, Bing, Bird, Brown, Bryant, S. R. and H. L. Crothers, F. J., F. H., and W. K. Evans, Forwood, Fronfield, Gottschalk, Horning, Harbridge, Hoopman, Hamilton, Jefferis, Johnson, Lehman, Loughead, Maison, Neufeld, Partridge, Stiteler, Stellwagen and son, Sweeney, Taylor, and White.

Dr. Albert Eaton of Philadelphia, district censor, was present as a special guest, also Drs. Matlack and Thomas of the Chester Hospital.

After the meeting a bountiful reed-bird dinner was served, the society being the guests of Drs. Franklin J. and Fred W. Evans.

The regular meeting of the Delaware County Medical Society was held on October 11 at the Rose Tree Club House upon the invitation of Dr. J. Harvey Fronfield.

Members present: Drs. Forwood, Jefferis, S. R. and H. L. Crothers, Baker, Bird, Bryant, Buck, Dickeson, Easby, F. J., F.H., and W.K. Evans, Gray, Harbridge, Lashelle, Maison, McCool, Neufeld, Taylor, Partridge, Shortledge, Stiteler; guests, Prof. Ware, Drs. Bartleson, Sweeney and Roberts.

Minutes of the September meeting were read and approved. Letter in regard to Dr. Komorass of Chester was read. The secretary was on notice directed to write to State Board of Examiners to see if he had been licensed.

Dr. George D. Morton of Prospect Park and Charles B. Shortledge of Lima were unanimously elected to membership.

Prof. Ware then upon invitation lectured upon "Cardio-Vascular Degeneration" and upon "Pneumonia." The lecture was an exceedingly valuable one and occasioned considerable discussion, participated in by most of the members present. The lecture was followed by a bountiful dinner served in the Rose Tree Hotel, after which a unanimous vote of thanks was tendered Dr. Fronfield for his hospitality.

On motion meeting adjourned.

The meeting of the Delaware County Medical Society was held on Thursday, November 8, at the Chester Hospital at 3:30 P. M., the president in the chair.

The secretary read the minutes of the last meeting which were approved as read. The president then introduced Dr. M. P. Warmuth of Philadelphia who gave a talk on "A Simple Method of Intestinal Anastomosis." His talk was supplemented with charts showing the different steps in the operation which with his demonstrations made it very clear. Dr. Warmuth claimed that the operation was not for the purpose of doing away with the use of the "Murphy button" or other methods, but to give a simple and effectual method where the surgeon found it necessary to do the operation in an emergency.

The following members were present: Drs. Brown, S. R. Crothers, Dickeson, F. J. Evans, Forwood, Fussell, Gottschalk, Gray, Jefferis, Maison, Stiteler, and White; also Drs. Matlack and Thomas of the Chester Hospital.

Ellen E. Brown, Reporter.

FAYETTE—September.

The Fayette County Medical Society met in the office of the directors of the public schools, Uniontown, September 4, at 1:30 p. m. Dr. Hoover occupied the chair, and the following members were present: Drs. Colborn, Crow, Eastman, Ewing, Gaddis, Hackney, Hibbs, Holbert, LaClair, Larkin, Osborn, Rasely, and Sangston; as guests, Dr. Robinson, Mr. Campbell, a medical student, and Mr. George M. Bailey.

The application of Dr. George E. Nickle of Belle Vernon, for membership was read and laid on the table indefinitely.

Dr. Rasely read an interesting paper on "Surgical Diseases of the Kidney." Dr. Thomas N. Eastman read a paper, "An Imperative Duty." This paper was discussed by Drs. LaClair, Sangston, Sprowls and others.

On motion of Dr. Eastman, Drs. Sangston, Robinson, and Osborn were invited to prepare papers of a reminiscent character to be presented at some future time. The men are among the oldest practitioners of the county and such papers would certainly be most interesting.

Drs. Batton, Hoover, and McClenathan were appointed on the program committee for 1907. On motion of Dr. LaClair, Dr. F. C. Robinson, the oldest practitioner in the county, now about eighty-five years of age, was elected an honorary member of our society for life, with all the privileges of the society.

On motion the society adjourned to meet in Connellsville on the first Tuesday in November.

O. R. Altman, Reporter.

FRANKLIN—October.

The Medical Society of Franklin County met in its regular quarterly session, October 16, at 1:30 p. m. in the Medical Library room in the Court House, Chambersburg.

The president, Dr. McLaughlin, presided. The following members were present: Drs. Amberson, Asper, Bonebrake, Coffman, Croft, Devilbliss, Greenawalt, Hoover, Kempter, Maclay, McLaughlin, Miller (honorary member), Myers, Palmer, Charles F. and E. W. Ramsey, Schultz, Seibert, Sollenberger, Swan, Unger, and as guest, Dr. Guy L. Zimmerman of Lemasters.

The minutes of the July meeting were read and approved. The following were nominated to the offices for the year 1907: President, John W. Croft, Waynesboro; vice-presidents, Guy P. Asper, Chambersburg, and James H. Swan, St. Thomas; secretary, John J. Coffman, Scotland; assistant secretary, H. Clay Devilbliss, Chambersburg; treasurer, David Maclay, Chambersburg; censor, 1907-'09, Henry X. Bonebrake, Chambersburg; committtee on public policy and legislation, David Maclay, Abraham H. Strickler, and Theodore H. Strickler.

Dr. Edward W. Palmer, Greencastle, whose application was favorably reported upon by the censors, was unanimously elected to membership in the society.

Applications were received from Drs. John Gelwix, Chambersburg, and Guy L. Zimmerman, Lemasters. Upon motion the applications were referred to the censors.

Dr. D. Maclay, Chambersburg, member of the House of Delegates, reported on the

Bedford Springs meeting of the state society.

Dr. R. W. Ramsey, who also attended the meeting, gave an impromptu report of what he noticed and heard.

Dr. John J. Coffman read a report of the Censorial Meeting of the Fifth District which was held at York, August 9.

Drs. Maclay and Coffman were accorded a vote of thanks for their reports.

Dr. P. D. Hoover, Waynesboro, read a paper on "Catarrhal Hepatitis." Dr. Hoover exhibited some specimens of biliary calculi which had been passed by the patient. The subject was also discussed by Drs. Kempter, Amberson, Unger, Devilbliss, Greenawalt, Palmer, and others.

Dr. Edward W. Palmer discussed some cases of summer grip.

Dr. Benjamin F. Myers, Chambersburg, read a report of an autopsy of "Abdominal Pregnancy" in which the placenta was attached to the descending colon. The fetus was apparently of six months' development. The specimen was exhibited. The paper was of much interest and elicited considerable discussion. Dr. Amberson spoke of the value of such a report and moved that the paper be sent to the Journal for publication. This was agreed upon.

Dr. H. C. Devilbliss, Chambersburg, reported a case of labor in which at his complimentary visit he found the penis of the child completely circumcized.

Society adjourned at 3:45 p. m.

John J. Coffman, Reporter.

HUNTINGDON—October, November.

The Huntingdon County Medical Society met at the Court House, Huntingdon, Tuesday afternoon, October 11, with Vice-president C. A. McClain in the chair. Members present were Drs. Beck, Brumbaugh, Bush, Charles and W. J. Campbell, Evans, Frontz, Harman, D. P. Miller, Moore, Myers, Sears, Smith, Steele, Stever, and Wolfe. Visitors: Drs. Hill of Everett, William Breneman of Saxton, Loudon of Alexandria, Read, Wilson and Dill of Huntingdon, and Prof. Charles W. Burr of the University of Pennsylvania.

One application for membership was received.

Prof. Charles W. Burr was introduced and delivered an address on "Neurasthenia" or the management of men and women who have nerves. He said that some are born with weaker nerve strength and become neurasthenics when the storms of life come. Cases of real hysteria are those with hysterical fits or palsy. A person who always complains and finds fault with everything is one who has not been taught self-control and does not have real neurasthenia. He also spoke of borderland insanities as suspicious and vague fears. In regard to treatment, rest cure is not to be used unless real and actual physical weakness exists. He urges real exercise or work when no physical weakness exists; character of the work does not matter if the patient is interested or feels it a duty. Travel abroad and the strenuous life attending it is not good for neurasthenics. A quiet outdoor life is better. Hypnotism does not cure this disease; fright sometimes does. Suggestion, unconscious persuasion, is most important. Faith in the attending physician is essential. He thinks it the duty of the family physician to control the individual health of the community; to educate parents to have good moral and mental vigor.

The address was followed by a free discussion in which a number of questions were asked Dr. Burr. He closed the discussion with the following remarks: Household work will not cure, but will make a neurasthenic worse. Lots of neurasthenia is selfishness. Treadmill life is sometimes the cause of neurasthenia. Teach the boy and girl nerve self-control. Drugs do not do much good in this disease; cod liver oil and syrup iodid of iron are good when indicated. A neurasthenic wife of a poor man ought to be treated in a hospital. In genuine nerve weakness there is always physical weakness.

A rising vote of thanks was given Dr. Burr for his address.

Adjourned at 3 P. M.

The Huntingdon County Medical Society met at the Court House, Huntingdon, November 8, at 1:30 P. M., with President Dr. J. C. Fleming in the chair.

Present: Drs. Banks, Brumbaugh, Evans, Frontz, Harman, Johnston, McCarthy, Moore, Myers, Sears, and Wolfe.

Dr. Brumbaugh read a paper on "A Few Commonplace Things in Medicine." He spoke especially of the contagiousness of tuberculosis, colds, and jaundice. Dr. Banks read a paper on "Presenility." Both papers were interesting, well received, and freely discussed.

Adjourned at 3:10 P. M.

H. C. FRONTZ, Reporter.

INDIANA—OCTOBER.

A stated meeting of the Indiana County Medical Society was held October 16, at 1 P. M. with Dr. Jason W. Carson in the chair. Members present: Drs. Carson, Cass, Coe, Davis, Dodson, Hammers, McHenry, Prothero, St. Clair, Shields, W. A. Simpson, Walker and Wellman.

Dr. J. T. Cass read a paper on a case of Landry's paralysis occurring in a school girl fourteen years of age. One point brought out in the discussion was whether the successful vaccination fourteen days previously had any bearing upon the case.

The society then informally discussed the vaccination laws. It was the opinion of the members present that the present law is not rigid enough and that new ones ought to be enacted.

Dr. W. A. Simpson was appointed essayist and Dr. McHenry to open the discussion for the January meeting.

The question, regarding contract practice by members of this society has been before this society for some time, and an amendment prohibiting the same was, upon vote, not approved.

JAMES S. HAMMERS, Secretary *pro tem.*

LAWRENCE—OCTOBER, NOVEMBER.

The Lawrence County Medical Society held its quarterly meeting on October 4, at Hotel Henry in New Castle, with Vice-president John D. Tucker in the chair.

After the reading of the constitution as prepared by Drs. McDowell, Zerner, Cooper and Foster, it was adopted by the society.

The officers for the ensuing year were elected as follows: President, Dr. Jesse R. Cooper; vice-presidents, Drs. Charles A. Reed, and E. M. McLaughry; secretary and reporter, Dr. B. E. Sankey; treasurer, Dr. John Foster; censors, Drs. John Foster, W. L. Campbell, and R. G. Miles.

After a short address by the retiring vice-president, Dr. John D. Tucker, Dr. Jesse R. Cooper read a paper on "Conservative Surgery of the Female Adnexa" which was liberally discussed by the members.

The Lawrence County Medical Society held its meeting at the residence of Dr. R. E. Redmond, New Castle. The meeting was called to order by the president, Dr. J. R. Cooper, with fourteen members present.

After the conclusion of the business, a paper was presented by Dr. Redmond on "The Fevers Following Childbirth." This subject he dealt with at length, also giving his treatment. This was followed by an enthusiastic discussion which was entered into by a majority of those present.

B. E. SANKEY, Reporter.

LEBANON—OCTOBER.

The Lebanon County Medical Society held its meeting in the office of Dr. William M. Guilford, Lebanon, October 9. Those present were Drs. Beckley, Grumbine, Guilford, Heilman, Klein, S. Light, William R. Roedel, Strickler, and Weiss. Dr. Besse of the Hospital of the Good Samaritan was present as an invited guest. Dr. Grumbine, vice-president, presided during the meeting.

The report of the auditors appointed to audit the treasurer's account for 1905 was read and adopted as was also the account itself.

Dr. Guilford, chairman of the committee on revision of constitution, reported that the work was well under way.

The notice from State Treasurer Waggoner of the assessment for the year beginning with September, 1906, was read.

Dr. S. P. Heilman read a paper on "Postpartum Hemorrhage," which brought out an interesting discussion to which all present made practical contributions from their experiences. The use and misuse of ergot in certain conditions were discussed, also the good results from the use of quinin in tedious labor. The practical side of the use of the binder was discussed, showing varying and opposite views as to the expediency, or efficacy, of using that time-honored appliance, the majority, however, declaring in its favor.

The meeting was one of much interest, enhanced by the courteous hospitality of the host, Dr. Guilford, who was recently reëlected censor of the Fourth District.

S. P. Heilman, Reporter.

LEHIGH—October.

The regular monthly meeting of the Lehigh County Medical Society was held in the Administration Building, Allentown, Tuesday, October 9, at 2 p. m.

Arthur G. Dewalt, Esq., state senator from Lehigh County, delivered an address on "The Kinship of Medicine and Law from a Legal Standpoint." This is well worth reading by physicians, having additional weight coming from a lawyer whose authority upon the question is unquestioned. The address will appear in full in a future number of the Journal.

Drs. George H. Boyer and Asher Kriebel qualified for membership in the society and were admitted.

The members present were Drs. Albright, M. J. Backenstoe, Bleiler, Boyer, Burke, Butz, Cawley, Dickenshied, Albert J. and W. B. Erdman, Eshbach, Fetherolf, Fogel, Greiss, Guth, R. K. Hartzell, Hausman, Hendricks, Henry, Herbst, Hertz, Horn, Hornbeck, H. J. S. Keim, King, Kriebel, McAvoy, Mickley, Reichard, H. H. Riegel, Ritter, Schaeffer, Scheirer, F. C. and G. F. Seiberling, and Young. Also as guests, Drs. J. S. Smith, Allentown; C. J. Pflueger, Fogelsville; W. R. Trexler, Fullerton; P. Wagner, and W. A. Rentzheimer, Hellerstown.

W. A. Hausman, Reporter.

LUZERNE—September, October.

At the meeting of the Luzerne County Medical Society, September 19, there were present thirty-six members and five visitors. Dr. Weaver was elected to preside.

Dr. Grosser, the essayist of the evening, could not be present, and his paper on "Diseases of the Fallopian Tubes" was read by Dr. Fell. The treatment of tubal inflammation is preventive, palliative or curative. In the preventive treatment the man who has gonorrhea should be warned against matrimony until repeated bacteriological examinations of the urethral discharge show that it is sterile. The man who is already married and contracts gonorrhea must be informed of the danger of infecting his wife. Young men should be warned that the prevalent idea of gonorrhea being a small matter and easily cured with no permanent results, is not so.

In acute salpingitis with fever and intense pain, absolute rest in bed is required. Hot douches of a gallon of water, temperature about 110 to 120 degrees Fahrenheit, should be used night and morning. A free evacuation of the bowels must be secured by mild salines. After the douche a vaginal tampon saturated with boroglycerid or ichthyol four parts to six of glycerin should be inserted and pushed well up into the vault. Ice bags on the lower abdomen usually give the greatest comfort as an external application. Sometimes cold is uncomfortable to the patient or fails to relieve the pain; in this case moist heat in shape of a large flaxseed poultice should be substituted. Curative treatment of salpingitis is usually operative. It is indicated in very large pus tubes and in cases with so much suffering that the patient urgently demands relief; after failure of palliative treatment; in women who can not afford to be invalids; and in those who deliberately select radical treatment for relief of their symptoms. The operations available for the cure of salpingitis are the severance of adhesions and reposition of the tubes; salpingostomy; salpingectomy, partial or complete; salpingo-oöphorectomy; and hysterectomy with removal of the tubes and ovaries. The tubes may be approached for any operation required by the vaginal or abdominal route.

The subject was discussed by Drs. Stewart, Lenahan, Wolfe, and by Dr. Fuller of Grand Rapids, Mich.

Dr. S. P. Mengel reported a case of follicular odontoma and Dr. Stackhouse reported a similar case.

Drs. Fell and Stackhouse, delegates to the state convention, reported the proceedings of the Bedford Springs meeting.

At the meeting of October 3 there were thirty-one members and two visitors present. Dr. James acted as chairman and Dr. E. E. Wagner was elected to membership.

Dr. Charles E. Ashley read a paper on "Chorea." Under treatment he believes that in view of the frequency with which chorea develops in intelligent and ambitious children of neurotic tendency, who are overworked at school, something may be done toward preventing the development of the disease by insisting on moderation in study and a proper observance of the rules of physical and mental hygiene. Competition for prizes among young children and any other excess in school work should be forbidden, and the child encouraged to spend as much time as possible out of doors in healthy games and at play.

Should any indication of chorea appear the child should be removed from school at once and placed in as good hygienic circumstances as possible. The child's attention should not be directed toward the disease, and the irregular muscular movements and twitchings should not be openly noticed nor be commented upon by others, since self-consciousness and suggestion play an important part in exaggerating the choreic symptoms. Removal from familiar surroundings and relations, to the country or seashore, will go far toward relieving the condition. Massage and hydrotherapeutic measures are almost always indicated and do especial good in the cases in which anemia and general debility are present. In severe cases rest in bed for a few days or even for a few weeks is advisable. With these nonmedicinal restoration measures, the patient will usually recover within a month or two but in most cases there can be little doubt that restoration is hastened by proper medicinal treatment.

There seems to be but one drug which has met with much success in the hands of all observers, namely, arsenic. It is generally given in the form of Fowler's solution, beginning with small doses and gradually increasing until tolerance is reached. It should be well diluted and given either during meals or shortly after. It is advocated by some writers to increase the dose of arsenic until the full physiological effects are produced, but he can not see the philosophy of such treatment. While it may rapidly reduce the choreic movements, the damage done to the digestive organs is certainly detrimental to the patient's general condition, which is the point that should receive our first attention. Strychnin, silver nitrate, potassium iodid, the zinc salts and cimicifuga have been used with no very positive results, so arsenic is from all indications the remedy *par excellence*. The general treatment consists in improving the patient's general condition and correcting coexisting disorders. The digestive organs should be put in as good condition as possible. The bowels should be regulated so that at least one good movement a day is secured. Purgatives should be avoided if possible, but an occasional laxative is necessary if the bowels can not be regulated by diet and force of habit.

As the urine is often scanty, with high specific gravity and loaded with phosphates, uric acid and urates, an increased elimination on the part of the kidneys is indicated and is best brought about by encouraging the drinking of plenty of water. All medicines should be well diluted for the same reason. Medicinal diuretics are seldom indicated but if necessary small doses of acetate of potash may be dissolved in milk and administered without the patient's knowledge.

The anemia usually present should receive attention; iron, given in small doses and well diluted, has always been found to act well. Its administration should be carefully watched and care should be taken not to give more than can be readily absorbed. The preparation of iron is largely a matter of choice, but one of the preparations of iron with manganese will answer admirably. If the insomnia be mild it requires no treatment, but if severe and accompanied by much restlessness it must be overcome, if possible. This is often a difficult problem to solve. Chloral hydrate is well borne by children, and may be administered in full doses. Five to ten grains in a cup of hot milk usually produce a good night's sleep. Hyoscin hydrobromate and the other powerful hypnotics advocated by some writers should be withheld from children, also the coal-tar preparations. Quinin and salicylates are well borne by choreic patients in cases of coexisting disorders such as malaria, rheumatism, etc.

Any source of reflex irritation, such as adenoids, phimosis and intestinal parasites, may receive palliative treatment, but surgical procedure should be avoided until choreic symptoms have subsided.

After recovery from chorea especial care should be exercised in the education and bringing up of the child. A display of good judgment and the intelligent direction of conduct and development will be well repaid in increased stability and safety from relapse or from the subsequent occurrence of some other and more serious neurosis. He then reported cases which prompted the paper. The subject was discussed by Drs. Roe, Davis, A. C. Brooks, and Stackhouse.

At the meeting held October 17 Dr. Ross presided and in place of the regular paper a series of interesting cases were reported. Dr. Guthrie reported a case of renal calculi with operation. Drs. Fell and Lenahan reported similar cases. Dr. Matlack reported a case of multiple sarcoma treated with Coley's Fluid, operations and x-rays. Dr. Wolfe reported a case of fracture of the upper third of the femur in which from extension there was an unusual lengthening of the limb of an inch and a half. This with removal of extension disappeared in three weeks. He explained it by supposing that the tendons and ligaments, becoming exhausted, finally stretch but contract again upon removal of the weights. Dr. Long reported a case of hematoma after confinement.

There were present thirty-five members and one visitor.

James W. Geist, Reporter.

MERCER—October.

The Mercer County Medical Society met at the court house, Mercer, October 12, at 1 P. M. Although the weather was unfavorable a large number of members were present. Dr. M. M. Magoffin presided.

After the routine business was transacted, Dr. John B. Donaldson of the Washington County Medical Society, Councilor for the Seventh District, gave a very interesting talk on the "Usefulness of the County Medical Society." A general discussion by the members followed. Mercer County has always been proud of its medical society. It should rank one of the foremost in the state and would by the earnest cooperation of each member.

An interesting paper on "Typhoid Fever" was read by Dr. Stoyer, and discussed by the members.

The next meeting will be held at Greenville on the second Friday of January, 1907. An instructive program is being prepared. We expect to have present a physician of national reputation. It will be to the interest of every member to be present.

Charles I. Walker, Reporter.

MONROE—November.

The Monroe County Medical Society met in the Miller Building, Stroudsburg, November 7, and was called to order by the president, Dr. Rhoads. The following were present: Drs. Cary, Gregory, Hagerman, Henry, L'Amareaux, Logan, Miller, Rhoads, Smith, Sterns and Thompson.

Dr. Joseph F. Miller was proposed for membership.

Dr. Wm. E. Gregory read a paper on the American Medical Association, dwelling on how it is conducted, the large number he saw at Boston, the general interest manifested, especially in the surgical section, and the great benefit derived therefrom. The paper being somewhat out of the ordinary was well followed and thoroughly enjoyed.

Drs. Singer, Gregory and Miller, were appointed a committee to draft resolutions on the death of Dr. Frank Beers, one of our members, a resident of Bushkill, and whose death occurred at Lebanon a week ago.

N. C. Miller, Reporter.

PHILADELPHIA—October 10, October 24.

A stated meeting of the Philadelphia County Medical Society was held Wednesday, October 10, with the president, Dr. Charles K. Mills, in the chair.

Dr. George M. Dorrance, in a paper on "The Treatment of Osteomyelitis by Iodoform Bone Plugging," pointed out the disadvantages in the usual methods of treating osteomyelitis and described the method of plugging with iodoform, which method was first used by Moorhof. The advantages claimed were that the plugging did not act as a foreign body, possessed the medicinal properties of iodoform without causing toxic symptoms, that it was gradually absorbed and replaced by granulation tissue and, in from three to four months, by new bone. Cases were reported of chronic tuberculous osteomyelitis of the tibia, septic osteomyelitis of the ulna following compound fracture, typhoid osteomyelitis of the sixth rib, and typhoid osteomyelitis of the inferior maxilla in which this treatment had been employed by Dr. Dorrance with entire success. In some of the cases a number of other surgical procedures had previously been used without success. Dr. Dorrance believes that the treatment of osteomyelitis by iodoform plugging is far in advance of any previously described method.

Dr. William Campbell Posey, ophthalmologist, and Dr. R. Tait McKenzie, director of the department, presented a paper on "Results of the Examination of Students' Eyes in the Department of Physical Examination, University of Pennsylvania," which was based upon the results of the examination of 883 students. The examination of the eye was supplementary to a thorough study of the general physical condition. There had been fewer absences from illness and less interruption of studies since the correction of refraction errors. It was shown that the increase of nearsightedness could be prevented by proper care of the eyes. Of the students examined 30.34 per cent. had defective vision in one or both eyes. Of the 883 examinations 14.70 per cent. showed myopia, and the remaining either hypermetropia or emmetropia. In the comparison to ascertain the influence of age and study upon the refraction it was found that among 633 students in the two lower classes 87.25 per cent. were hypermetropic and 12.75 per cent. were myopic, while of 261 students in the upper classes 80.25 per cent. were hypermetropic and 19.75 per cent. were myopic. Five per cent. more of myopia was found in the professional than in the college department, presumably because students of the college department came from private schools where the eyes were properly protected, while the others came frequently from rural communities where accurate refraction is impossible. Of the 883 students examined 609 had full visual acuity in each eye; 94 had full visual acuity in but one eye, while 180 had subnormal vision in both. Of those complaining of headache 7.59 per cent. had subnormal vision, while the remaining 92.41 per cent. had full visual acuity. Scoliosis was present in 6.68 per cent. and of this number the vision of one eye was perceptibly lower than its fellow in 13.79 per cent., supporting the inference of some, of the possible responsibility of ocular errors for this abnormality. The figures were given to show the importance of including careful ocular tests as part of the physical examination of every student.

Dr. Samuel D. Risley gave an historical sketch of the work done in Philadelphia in the last twenty-five years along the line of work presented in the paper of Drs. Posey and McKenzie.

Dr. F. M. Perkins referred to the increase of myopia resulting from close application of the eyes.

Dr. James Thorington referred to hereditary predisposition as a factor in the production of myopia, and further to German statistics which showed that glassing patients saved fifteen per cent. from becoming myopic.

Dr. Wendell Reber believes that the German method of measuring the eyes would be more effective in diminishing myopia if careful attention were paid to astigmatism and to the full correction of ocular errors in young children.

Dr. Howard F. Hansell spoke of the value of examination of the eyes under mydriatics.

Dr. R. Tait McKenzie stated that in their routine examinations Dr. Posey and himself had quite commonly found the characteristic tilting of the head, defective posture, flat chest and protruding abdomen in men having eye defects. Correction of the eye defects is the first requisite in the correction of these faulty postures, particularly in the case of astigmatic and myopic eyes.

Dr. Alfred Gordon presented a paper on "The Rôle of Organic Phosphorus in the Treatment of Asthenic Conditions in Various Nervous Diseases," which is based upon our knowledge of the presence of phosphorus in various tissues and particularly in the nervous system. The organism must depend upon the amount of consumed food to keep up the average quantity of phosphorus. The discoveries of Gobley and Liebrich, as to the existence in the brain and nervous tissue in general of organic combinations of phosphorus and the elimination of phosphorus in the urine and feces in inorganic combinations, were regarded as proofs that the decomposition of the organic compounds of phosphorus takes place in the tissues. In this latter process the nervous tissue was said to play the most important rôle. A number of examples were brought forward. Reformation of organic phosphorus was said to be a necessity in exhausting disorders of the nervous system. As among all the preparations of phosphorus the organic compounds alone are utilized by the organism. Dr. Gordon undertook a series of clinical investigations in fifty-six cases of various nervous diseases, in which he administered organic phosphorus. The results were very satisfactory.

"The Effect of Food Preservatives upon Peptic Digestion." Dr. Joseph Sailer and Dr. Clifford B. Farr had made a series of experiments with Metts' method in order to determine to what extent various food preservatives inhibited peptic digestion. Of the ordinary preservatives it was found that boric acid and borax had no inhibitory effect. Formaldehyd inhibited only in solutions stronger than 1:100. Alcohol inhibited in solutions of twenty per cent. or more. In weaker solutions the inhibitory effect was not observed. Salicylic acid and sodium salicylate, except in very high dilutions, had a strong inhibitory effect, and the same was true of benzoic acid, sodium benzoate, and sodium sulphite. The latter caused total inhibition in dilutions of one tenth of one per cent. Resorcin had very little inhibitory effect, and guaiacol carbonate had none at all, probably on account of its insolubility in very high dilution. Creosote in very high dilution, that is, to the extent to which it is soluble in water, or in n/20 HCl, had a strong inhibitory effect.

These results were true only for solutions of the substances under examination in the artificial gastric juice. It was found that if the Metts tubes were exposed to the preservative solutions and subsequently immersed in the artificial gastric juice the results were not the same. Under these circumstances formalin had a powerful effect, but salicylic acid, sodium sulphate and sodium benzoate had a very slightly inhibitory effect.

A stated meeting of the Philadelphia County Medical Society was held Wednesday, October 24, the president, Dr. Charles K. Mills, in the chair.

Dr. J. Dutton Steele read a paper, "The Clinical Significance of Small Hemorrhages from the Gastro-Intestinal Tract," and in summarizing said that gastric ulcer does not bleed as often as might be expected and that in doubtful cases the stools must be examined routinely for several weeks before chronic ulcer can be excluded. The test for blood was regarded as probably of most value in differentiating between ulcer and hyperesthesia of the stomach, the result of a sensory neurosis. The detection of small hemorrhages is of aid in making the prognosis and in the conduct of treatment; for example, in determining the advisability of passing the stomach tube in cases of suspected ulcer; in watching the effect of a change of diet during an ulcer cure; in watching a case of convalescent ulcer in order to foretell and prevent relapse or recurrence of serious hemorrhage. Persistence of bleeding after the patient has been put at rest and on a milk diet, may signify that the ulcer is chronic and will not yield to medical treatment, or possibly that a cancerous process is developing on the floor of the ulcer. Small hemorrhages are more frequent in ulcerated cancer than in peptic ulcer. In cancer as a rule the bleeding is almost constant and blood is found in most of the stools, but cases also occur in which bleeding is infrequent or absent for some days, although there is every reason to suppose that ulceration has taken place. Its continued absence on the other hand, is strongly against the existence of carcinoma.

Conditions that may give rise to small gastro-intestinal hemorrhage and simulate ulcer are high hemorrhoids, tuberculous enterocolitis, purpura and septic conditions, but especially cirrhosis of the liver with well established, deep collateral circulation.

Dr. Joseph Sailer remarked that occult hemorrhage is comparable to many other physical signs in that it is not pathognomonic of any particular condition. Although it occurs in a variety of conditions, it may, under certain circumstances, be absent in each. A point of great value brought out in Dr. Steele's paper is that under many circumstances when occult blood is suspected, bleeding does not occur, while at other times, when only a casual examination is made, a considerable quantity of blood may be found. He agreed with Dr. Steele that in all the cases in which occult blood is sought for, whether found or not, careful consideration must be given to all other symptoms and physical conditions presented by the patient.

"Gunshot Wounds." Dr. W. S. Wadsworth gave a résumé of so much of the technical, medicolegal and military side of gunshot wounds as would be of use to the general practitioner. Using his experience for seven years as coroner's physician and his studies as rifle expert in the militia he pointed out the different effect on the tissues caused by the gunpowder and bullets under the different conditions of distance, sort of weapon and quality and quantity of powder. He pointed out also the part that each tissue plays in modifying the nature and severity of the wound, analyzing the causes which vary the smudge, powder marks, singeing, contusion, laceration and penetration. He indicated the effect of weight, size, shape and material of the projectile, also the influence of length of barrel, rifling, fouling, rust and corrosion, the influence of the tissues in turning a bullet or in retarding its progress. The interpretation of wounds, whether caused by a high velocity or a spent bullet, and the resulting bruising in each case were considered. The nature of the impact of bullets of different velocity and mass and at different angles of incidence and the course taken by them in the tissues were dwelt upon. The nature and significance of various foreign substances carried into wounds, hemorrhage and its significance, the significance of wounds of different organs and the time of probable life after serious wounds, were spoken of. The duties of the physician, first to the patient and next to the state in observing, treating, taking notes and notifying authorities, were fully discussed.

Dr. H. Emerson Wetherill gave some interesting accounts of cases of gunshot wounds seen at Santiago and in the Philippine Islands, one of which was that of a man shot six times with the same bullet, the bullet having gone through the forearm, arm and back.

Dr. Wadsworth in closing spoke of multiple wounds by the same bullet and the effect of a bullet when it begins to lose speed. The outside wound is of special value in the observation of gunshot wounds.

Dr. Augustus A. Eshner, in a paper on "Paralysis Agitans without Tremor," pointed out the inadequacy at times of names of diseases based on clinical manifestations by reason of the occasional absence of one or another distinguishing characteristic. Thus, exophthalmic goiter may be unattended with protrusion of the eyeballs or with enlargement of the thyroid gland. Again, paralysis agitans is not a true palsy, and rarely even the tremor is absent. When present, however, the tremor is so distinctive as to be almost unmistakable. This tremor was minutely described and the case reported of a weaver sixty-one years old, presenting a fixed countenance, stooped shoulders and a tendency to propulsion. At this time no tremor was apparent, but at a subsequent observation slight tremor was appreciable in the thumb of one hand suggestive of the pill-rolling movement and also tremor of the intrinsic muscles of the hand. In this case, as in two others previously reported by Dr. Eshner, the absence of tremor was not constant, and the opinion was expressed that the temporary omission is to be explained by restraint through muscular rigidity. The tremor may, hypothetically, be attributed to interruption of motor impulses responsible for muscular tone, in consequence of interference, by neurogliar hyperplasia, with the transmission of nerve-force. The subsidence of the tremor on voluntary effort is in turn due to the amplification of the tonic motor impulses necessary for the execution of a given movement. Restraint of the tremor by passive movement may be considered as reflex. The cessation of the tremor under these conditions is at best only temporary and persists for only a brief period of time.

Dr. D. J. McCarthy asked whether Dr. Eshner's cases had come to autopsy, because in a recent case in which all the symptoms of paralysis agitans had been present without tremor there was found at autopsy cerebral arteriosclerosis with areas in the cortex in the immediate neighborhood of the motor area. It was thought that this condition might cause the peculiar gait and other symptoms of paralysis agitans.

Dr. Eshner in closing said that there had been no autopsy held in either of the three cases. Regarding the influence of physical and psychic shock in the etiology of paralysis agitans Dr. Eshner thought such shock did not operate directly in the production of the morbid anatomy of the disease, but merely as factors in proclaiming disease the foundation of which already exists. He thought it improbable that paralysis agitans should be confounded with senility, whether tremor was present or absent. When present, the tremor of senility behaved much as most other tremors do, being increased by intended movement and often absent during rest, while the reverse conditions were present in paralysis agitans.

R. Max Goepp, Reporter.

SCHUYLKILL—October.

The Schuylkill County Medical Society met at Bergeman Hall, Pottsville, October 2 at 2 p. m., with the following members present: Drs. Callen, Fleming, Hermany, Hoffman, Lenker, Lessig, Morris, Ressler, Santee, Taggart, and Williams.

After the reading of the minutes, the report of the censors on the applications of Drs. H. M. Wasley and William J. Winters, Shenandoah, were read, and each was unanimously elected to membership. The final report of the censors on the application of Dr. G. R. S. Corson, Pottsville, formerly a member of the Philadelphia County Medical Society, in good standing, was read and Dr. Corson duly declared a member of this society.

Dr. W. T. Williams, delegate to the Bedford Springs Session of the state society, gave a report of the business proceedings, in which he expressed especial interest in the report of Dr. Beates upon the results of the examinations for state licenses to practice medicine. He thought that the untiring efforts of Dr. Beates were undoubtedly a strong factor in the elevation of the standard of medical education in the Pennsylvania medical colleges.

Dr. Taggart, who also attended the Bedford Springs Session, gave a report of the scientific proceedings principally. Both Drs. Taggart and Williams expressed themselves as favoring the old way of holding the meetings in one body rather than the present division into sections.

Dr. A. B. Fleming read a paper on "The Citizen Physician" in which he discussed the social, political and religious duties of the professional medical man. The paper was highly commented upon and discussed by the members present.

The society adjourned to meet at Pottsville, November 6.

G. O. O. Santee, Reporter.

SOMERSET—October.

The Somerset County Medical Society met in Salisbury on October 16. This is the last meeting for the year 1906. The two local physicians, Drs. A. M. Lichty and E. Hunter Perry, entertained the society at the Valley Hotel where the meeting was held. After a sumptuous meal the society was called to order by the president and the regular order of business was taken up, but owing to lack of time no papers were discussed.

The society elected its officers with the following result: President, Dr. E. Hunter Perry, Elk Lick; vice-president, Dr. Charles P. Large, Meyersdale; secretary, Dr. H. Clay McKinley, Meyersdale; treasurer, Dr. Walter S. Mountain, Confluence; financial secretary, Dr. Bruce Lichty, Meyersdale; district censors, Dr. Charles P. Large, Meyersdale; reporter, Dr. H. Clay McKinley, Meyersdale; and censors, Drs. Maurice Stayer of Rockwood, Harry C. Hoffman of Meyersdale, and A. M. Lichty of Elk Lick.

Drs. Snyder J. Louther of Somerset, Harry C. Hoffman of Meyersdale, and Walter E. Hickeman of Confluence were elected to membership.

The report of the financial secretary and treasurer showed a good condition of finances with the exception of a few delinquents who give promise of payment before the end of the year.

The report of the secretary showed that the society began the year 1906 with twenty-three members. During the year there has been one dismissal to the Blair County Society, and one new member received, which, together with three received at this meeting, gives a membership of twenty-six.

The report also shows by an incomplete list that there are forty-nine physicians in the county who are not members. This fact gives room for missionary work along this line, and the president urged each one to bring in a recruit at the next meeting, if possible.

Rev. Father Brady, who was a guest of the society, delivered a much appreciated address. He was thanked for his kind appreciation of the ardent and too often uncompensated services of the physician.

The next meeting will be held at Meyersdale, when the new officers will be installed.

H. Clay McKinley, Reporter.

SUSQUEHANNA—October.

The Susquehanna County Medical Society met at the Jay House in New Milford, October 2, and was called to order by Dr. Clayton Washburn. Rev. L. D. Mallory opened the meeting with prayer.

There were present Drs. Birdsall, Gardner, Halsey, Lockwood, Peck, Snyder, Washburn, and Wilson. Also Dr. C. L. Stiles of Owego, an honorary member, and Dr. Wainwright of the Moses Taylor Hospital at Scranton.

The Harford Fair and Firemen's Parade at Montrose accounted to some extent for an unusually small attendance.

Routine business occupied the society during the morning session. Dr. Wilson reported attendance at the meeting of the state society.

The question of fees for life insurance examinations was taken from the table, discussed and laid over to the next meeting.

Dr. Birdsall advocated repeal of a law in regard to sewerage, and a committee was appointed to take action in regard to the matter.

The society partook of an excellent dinner at the Jay House.

In the afternoon Dr. Wainwright read a

paper on the "Surgical Treatment of the Prostate Gland," and a fine discussion followed. Dr. Stiles spoke from experience.

An interesting case was presented at the clinic: A young child with large tumor on back of the neck.

Dr. Wilson reported on twenty-five cases of appendicitis. Drs. Gardner, Wainwright, Stiles and Lockwood spoke on the same subject.

A little after 4 o'clock the society adjourned to meet at Hallstead in February, 1907.

Through the courtesy of Col. C. C. Pratt and wife, members of the society visited the Pratt Public Library of New Milford, founded in 1892, by Ezra A. Pratt.

Calvin C. Halsey, Reporter.

WASHINGTON—November.

The regular November meeting of the Washington County Medical Society was held in its rooms in Washington with thirty-four members present. This was the annual election, and the following were elected for the ensuing year: President, Dr. William H. Alexander, Canonsburg; vice-president, Dr. William W. Weygrandt, Thomas; secretary and reporter, Dr. John B. Donaldson, Canonsburg; treasurer, Dr. A. E. Thompson, Washington; censors, Drs. Teagarden and McKennan of Washington, and Dr. J. W. Hunter of Charleroi.

A committee on public policy and legislation was appointed, consisting of Drs. John B. Donaldson, Canonsburg; Charles B. Wood, Monongahela; and J. Frank Donahoo, Washington. Also a committee on increase of membership was appointed, consisting of ten members residing in different localities. This committee consists of Drs. Hazlett, C. B. Wood, Conner, Hunter, Kelso, J. N. Sprowls, F. I. Patterson, Day, Riddle, and LaRoss.

On motion ten dollars was given to the N. S. Davis Memorial Fund, to be sent to Dr. J. M. Anders, Philadelphia, the authorized solicitor for the state society.

A program was submitted for the coming year in which thirty members will take part.

The stated paper, entitled "The Business End of a Doctor's Life," was read by the secretary. In this the attempt was made to show the general lack of business ability in a doctor.

Mr. James I. Brownson of the Washington Bar, was present by invitation and gave an instructive talk on "Negligent Malpractice," which was much appreciated by those fortunate enough to hear it, and the speaker was tendered a vote of thanks. He said in part: "Legally, medicine is a learned profession, and the law demands qualifications. Reasonable care and interest is demanded whether a recompense is received or not. He must keep abreast of the times." In citing the case of President Garfield, he said that "such treatment now would be considered malpractice."

John B. Donaldson, Reporter.

WAYNE—October.

The regular meeting of the Wayne County Medical Society was held at the residence of Dr. A. B. Stevens, South Canaan, October 18. After a bounteous banquet which the hostess had prepared for the visiting members, President Brady called the meeting to order at 2:30 p. m., the following members being present: Drs. Brady, Burns, Corson, Ely, McConville, Nielsen, Noble, Powell, Rodman, Searles, A. B. and W. A. Stevens, and White. Dr. A. M. Cook of South Canaan was also present.

Minutes of July meeting were read and approved.

Dr. A. M. Cook of South Canaan was proposed for membership. The secretary was directed to invite Dr. G. C. Merriman, who has recently located at Lake Como, to transfer his membership from the Lackawanna County to the Wayne County Medical Society. Drs. Dwight Reed and Burr Schermerhorn of Honesdale, now retired members of previous county medical societies, were elected honorary members of the present county medical society.

A man having registered in Wayne County without having complied with the state law, the president stated that he would petition the court that the registration be stricken from the county records.

The committee on reduction of medical examination fees by insurance companies stated that their report was not ready and they were continued.

The treasurer reported a balance of forty-six dollars in the treasury.

It was moved and carried that the annual assessment of thirty-five dollars by the state society be paid, and the treasurer was directed to forward the amount to the state treasurer.

The papers assigned for the meeting were then read. The subjects were: "Diseases of the Liver and Gall Bladder" by Dr. H. B. Searles, and "Diseases of the Kidneys" by Dr. A. C. Voigt.

Dr. Noble extended to the society, on behalf of himself and wife, an invitation to meet with them at Waymart on December 20, and the society very gladly accepted the invitation.

The thanks of the society were unanimously voted to Dr. and Mrs. Stevens for the delightful entertainment given the members.

The meeting then adjourned.

Louis B. Nielsen, Reporter.

YORK—September, October, November.

The regular meeting of the York County Medical Society was held in the parlors of the Colonial Hotel on September 6 with Dr. E. S. Mann in the chair. The following were in attendance: Drs. Baldwin, Betz, Bishop, Brodbeck, Comroe, Dice, Eisenhower, Faekler, Gilbert, Hildebrand, Holtzapple, Jessop, King, Klinedinst, Long, Mann, May, Murphy, Overmiller, Park, Rea, Strack, Venus, Weil, Zech, and as visitor, G. P. Yost of Glen Rock.

Dr. Roland Jessop read a paper entitled, "The Early Symptoms and Signs of Joint Tuberculosis." After giving in detail the earliest signs and symptoms to be looked for in three of the largest joints, the Doctor mentioned the following as more or less common to all: (1) Muscular rigidity in neighborhood of joint affected with occasional muscular spasm; (2) abnormal mobility of joint showing that ankylosis is only apparent; (3) assumption of rest position at the joint; (4) a swelling of peculiarly doughy consistency without heat and discoloration usually associated with inflammatory conditions; (5) a phthisical appearance and history. He also mentioned three tests that may be used as aids to diagnosis: (1) Search for temporary rise of temperature by taking the temperature at two hour intervals for a few days; (2) the removal of a portion of the suspected tissue and its examination by sections, stains, and cultivations to discover the tubercular bacilli; if none are found, inoculate a guinea pig and, if the material is tubercular, the guinea pig will develop miliary tuberculosis in a few weeks; (3) the injection of Koch's tuberculin. The last, however, is a difficult procedure as every bottle is different; even if made by the same firm, each bottle must be tested on animals. When used on a patient the results must be watched by a skilled observer or a trained nurse. Most experts report that such injections are of great value and well worth the trouble. In conclusion, he said that all joint conditions not yielding to the usual treatment should be viewed with suspicion and kept under observation until tuberculosis is positively excluded.

Dr. E. W. Eisenhower read a paper on "Caries of the Spine." Caries of the spine is a name applied to a destructive process which attacks the bodies of the vertebræ. It was known by Hippocrates and Galen, but first described by Percival Pott in 1779. This affection is most common in the first decade of life but occasionally is found in the aged. One or many foci of infection may exist in a single vertebra. A number of vertebræ may be attacked at the same time. The dorso-lumbar region is most prone to suffer. The tubercle bacilli are usually present but how they gain entrance is not positively known.

An early diagnosis can not be overestimated, for if proper treatment is instituted in the early stage of the disease many recover without complications and deformity. In the early stage pain is rarely localized in the vertebra affected, but referred to some other part of the body. Infants indicate pain by an expression of suffering and they cry when handled and bathed. The attitude of the trunk is peculiar. It is fixed to prevent motion, jars, and pressure of the vertebræ involved.

Rigidity of the spine develops earlier in caries of the cervical and lumbar vertebræ than in those of the dorsal region. The rigidity of cervical caries may simulate torticollis. If the disease is not arrested there is posterior curvature, later secondary curves may develop. Retroperitoneal and psoas abscess are among the most distressing complications. The course of the pus is in the line of least resistance. In consideration of the long course of the disease, the distressing complications, the deformity that may ensue, and the occasional termination in sudden death, this disease should be regarded as formidable.

The treatment should be adapted to the individual case. It should embrace rest, fixation of the vertebral column and relief from superincumbent weight, besides good air, nutritious food, and such medication as will increase the resistive power of the individual.

Discussion was opened by Dr. I. H. Betz. He spoke extensively on heredity, susceptibility, and the various avenues of infection. In bone tuberculosis he is inclined to believe that the tubercle bacilli gain entrance through the digestive tract rather than through the respiratory organs.

Dr. Gilbert emphasized the importance of an abundance of the most nutritious food, which is as important as living out of doors.

Dr. Comroe complimented the authors but stated that the best method of making an early diagnosis had not been mentioned, and this is by means of the fluoroscope. He stated that an early and positive diagnosis can now be made with the x-ray, no matter what joint is involved and hence there is no excuse for overlooking the true nature of this disease until irreparable damage is done, and that this method is now adopted in all large hospitals.

Dr. Holtzapple stated that from recent observations made, he is inclined to believe that physicians have yet considerable difficulty in some of the best hospitals to make an early diagnosis, and that early determinations of the tubercular bone disease is yet far from simple. These cases require study in the hands of some of the best men.

Dr. Long advocated to be very watchful. Suspecting an affection as being tubercular will often lead to an early diagnosis and the adoption of proper treatment in time to avert irreparable damage. He cited a few cases to emphasize his arguments.

Dr. Jessop closed the discussion. It having been stated that all doubtful cases may be decided by the use of x-ray even in the early stages of joint trouble, he failed to mention the x-ray because he was unable to find any positive statement as to its value. In fact, the literature on joint conditions seemed rather scanty, and in all that had come to his hand, which included a valuable paper published last year by Dr. Halstead of Johns Hopkins Hospital, the *x*-ray was not mentioned. He is impressed by his experience and reading that the chief point in treatment was the necessity of outdoor life, not necessarily in any special locality, but out of doors night and day for months and even years if necessary. This life with nutritious diet and symptomatic treatment has repeatedly brought recovery to tubercular cases without regard to the special organs involved.

The York County Medical Society held an interesting meeting in the parlors of the Colonial Hotel on October 4, at 1 P. M., with Dr. E. S. Mann in the chair. The following physicians were present: Drs. Atkins, Bacon, Baldwin, Barshinger, Bennett, Betz, Bishop, Bittinger, Brodbeck, Comroe, Dice, Dunnick, Eisenhower, Fackler, Gable, H. F. and J. M. Gross, Grove, Hildebrand, Holtzapple, Jessop, King, Long, Mann, Markel, May, Meisenhelder, Sr., and Jr., Murphy, Overmiller, Park, Pfaltzgraff, Shatto, Shearer, Shirey, Spahr, B. F. Spangler, Strack, Venus, Wallace, Weaver, Weil, Wentz, Zech, and the guest of honor, Dr. J. Chalmers DaCosta of Philadelphia.

Dr. DaCosta was introduced to the members present, after which he gave an address on "Surgical Tuberculosis." A rising vote of thanks was tendered Dr. DaCosta.

Drs. W. F. Bacon and Roland Jessop reported cases of gallstone recently operated upon. One case was a very marked one of hydrops vesicæ fellæ; the dilated gourd-shaped gall bladder reaching nearly to the pelvic brim, the entrance to the cystic duct obstructed by impacted gallstones.

The Committee on Contract Practice reported as follows:—

Your committee appointed to investigate the propriety of contract practice and report what forms of contract practice this committee believes to be consistent, and what forms inconsistent with the Principles of Ethics of the American Medical Association, begs leave to report that an effort was made to ascertain the prevailing sentiment relative to the points involved in the resolution and accordingly communications were addressed to various members of the profession and especially to some of the leading officials of the State Medical Society and of the American Medical Association.

At the suggestion of Dr. Geo. H. Simmons, general secretary of the American Medical Association, a communication from your committee was published in the *Journal of the A. M. A.*, March 17, 1906, urging a discussion of this important subject through its columns.

In commenting on this article Dr. Simmons states that "this subject has caused our profession in other countries serious trouble and is already a difficult problem with us in many localities. The Principles of Medical Ethics refers to this matter only in a general way.

"Section 1 of article VI., says: 'By the members of no profession are eleemosynary services more liberally dispensed than by the medical, but justice requires that some limits should be placed to their performance. Poverty, mutual professional obligation and certain of the public duties named in sections 1 and 2, of chapter III., should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, nor any profession or occupation can be admitted to possess such privilege.' "

The prevailing sentiment that may be gleaned from the numerous expressions of members of our profession, which are published in various medical journals, is uniform, and is in harmony with the view and opinion of your committee, that all forms of contract practice which are simply to procure and supply cheap medical service, are inconsistent with the Principles of Medical Ethics of the American Medical

Association, and derogatory to the dignity, standard, and usefulness of the medical profession.

H. M. Alleman, Hanover.
J. C. Atkins, Red Lion.
G. E. Holtzapple, Chairman, York.
Committee.

On motion this report was unanimously adopted.

Dr. A. A. Long made a report of the meeting of the State Medical Society, held at Bedford Springs.

Drs. E. W. Meisenhelder, Jr., C. W. Eisenhower, and John Gilbert were appointed a committee on scientific business to arrange a program for the coming year.

Society adjourned.

The regular monthly meeting of the York County Medical Society was held in the Colonial Hotel parlors, November 1 at 1 p. m. The president, Dr. E. S. Mann, presided, and the following were in attendance: Drs. Betz, Bishop, Bittinger, Comroe, Dice, Eisenhower, Fackler, Gable, Galbreath, J. M. Gross, Hildebrand, Holtzapple, Hoover, Jessop, Jones, Mann, Meisenhelder, Jr., Murphy, Park, Rea, Shearer, Snyder, Spangler, Strack, and Weil.

Dr. E. S. Mann read a paper on "Tremors," and Dr. G. E. Holtzapple gave an address and demonstration on "Gaits." These subjects were discussed by Drs. Betz, Gable and Comroe.

Dr. Comroe reported a sarcoma of the neck of unusually rapid growth, a large mass developing during one night, no enlargement having been noticed before. The mass was removed and the pathologist reports it to have been sarcoma.

Dr. William DeForest Olmstead of York, was proposed for membership.

G. E. Holtzapple, Reporter.

Bessie—I'd never marry a doctor.
Bertie—Why not?
Bessie—He'd never send you traveling for your health.—**Brooklyn Eagle.**

Necrology.

In Memoriam—Thomas W. Bortree, M. D.

(The following resolutions on the death of Dr. Thomas W. Bortree of Winwood, were adopted by the Wayne County Medical Society at a meeting held July 19, 1906.)

Whereas, It has pleased Almighty God to remove from us our brother, Dr. Thomas W. Bortree of Winwood, and

Whereas, By his death we lose a much respected and beloved brother, therefore, be it

Resolved, That we, the members of the Wayne County Medical Society, tender our heartfelt sympathy to the bereaved family. Also further be it

Resolved, That a copy of these resolutions be sent to the family, published in the Pennsylvania Medical Journal and spread upon the minutes of the society.

E. W. Burns,
W. T. McConville,
H. B. Searles,
Committee.

In Memoriam—James M. Gelwix, M. D.

(The following resolution was adopted by the Franklin County Medical Society.)

A good man, an able physician, a kind father, a considerate and loving husband, an esteemed and honored member of the profession he adorned, an active and zealous member of this society, and one of our number, Dr. James M. Gelwix, has gone to his reward, and is of us no longer.

He stood for independence of character, for courage, and above all, for absolute integrity. He was honored by his constituents, having the affectionate regard of his patrons, and commanding the respect of his fellows, and we are here met to pay tribute to his worth.

In the presence of death, the good man judges as he would be judged; he knows that men are only fragments, that the greatest walk in shadow, and that faults and failures mingle with the lives of all. He walked the highway of the right, on his soul never was a sordid stain, and he peacefully rests under the shadow of "the everlasting hills" over and by which he passed, musing, perhaps, of the trials, the hardships, and the unrequited toil that falls to the lot of so many, who, in their life's journey, have symbolized the work of Dr. Maclure of the "Bonnie Briar Bush." His work is finished and crowned with the milk white flower of a stainless life.

Dr. Gelwix, after passing his academic course, graduated from Jefferson Medical College in 1866, settled in Upper Strasburg, and afterward, for a short time, practiced in Chambersburg, then again in Upper Strasburg, where he continued until enfeebled by the affliction which ended his useful life. He was a gentleman of fine presence, courteous in manner, and a most agreeable companion, impressing those who had the pleasure of his acquaintance, as a frank, honorable and upright man, scorning the wiles of the trickster.

Resolved, That in the death of J. M. Gelwix, M. D., the society has lost one of its most valued members, the community in which he lived an upright citizen, an ever ready friend, and a physician of the "Old School." To his family we tender our most sincere condolence.

Johnston McLanahan,
P. B. Montgomery,
R. W. Ramsey,
Committee.

Dr. Gelwix, one of Franklin County's best known and most highly respected physicians, died at his home in Upper Strasburg on Tuesday night, July 10, 1906, of multiple sclerosis.

He was born at Upper Strasburg, Pa., in 1844; a son of ex-County Commissioner Daniel Gelwix. After attending the public schools and Academy of Strasburg, he entered and graduated at the Chambersburg Academy.

He was one of thirty-six physicians of Franklin County who signed the call in the autumn of 1868 for the reorganization of the Medical Society of Franklin County, which was effected in January, 1869. He was an active member of the medical society of his county, until he was enfeebled and unable to attend its meetings. At the time of his death he was an honorary member.

Dr. Gelwix was truly a gentleman in the full meaning of that word. To be a friend to those whom he could serve was his way of life; to know him was to feel with affection toward him.

He is survived by his wife, who was a Miss Zullinger, and two children, John M. who graduated from Jefferson Medical College in 1905 and served as resident physician at the Harrisburg Hospital during the past year; and Miss Sallie at home. Prof. Samuel Gelwix of Chambersburg, Mrs. P. M. Shoemaker of Strasburg, Mrs. Abram Miller of York, Pa., Mayor George W. Gelwix and Miss Kate of Thayer, Kansas, brothers and sisters, survive.

In Memoriam—Benjamin F. Hamilton, M. D.

(The following memorial note was adopted by the Venango County Medical Society at its meeting held September 18, 1906.)

By whatever name known, what guise of approach or what self or being enshrouded, Death brings an extinction of all worldly relation and a return to the dust of the earth.

"To live in hearts the world has tried,
And in Memory, that warder of the brain,
Is not to die or if to have died,
To have died to a purpose and not lived in vain."

As the burial urn stores the ultimates of form and lineament which we knew, honored and loved, so do the vaults of recollection treasure those qualities of mind, manner and motive, by which the deceased were wont to impress personality and by which we estimated moral, social and intellectual worth—extolled their virtues or decried their faults.

Dr. Hamilton of Emlenton, a recently deceased member of the Venango County Medical Society, achieved the favor of his neighbors and the praise of his colleagues. Mentally well endowed he brought to his life work a none too rugged body, but, by abstemious habits. prudent adaptation to environment, the dominating forces of will over the weariness of matter, spirit surmounting the frailties of flesh, he was enabled to so temper the exactions of an arduous calling as to afford us a becoming example of the successful country practitioner—to whom vague demeanor might prefer its suit and find a counselor, the grief laden a comforter, and the unfriended sick a good Samaritan.

Being well grounded in ethical principles, a definite, sound, moral sense made him courageous in his convictions of right and resentful of wrong. Withal, "the elements so mixed in him that Nature might say to all the world, this is a man."

C. W. Coulter,
J. M. Murdoch,
W. A. Nicholson,
Committee.

E. W. Moore, Secretary.

In Memoriam—C. Carrol Hummel, M. D.

(The following resolution was adopted by the Cumberland County Medical Society at the meeting held July 10, 1906.)

Resolved, That we bow humbly to the will of the Diety in that He has taken from us our beloved brother, C. Carrol Hummel. And to the memory of this able practitioner, respected citizen, and noble man we devote this page in testimony that, though gone from us, we hold him in loving appreciation and remembrance.

(The following resolution was adopted by the Harrisburg Academy of Medicine.)

Whereas, Through the announcement of the death of our late friend, Charles Carrol Hummel, M. D., of Mechanicsburg, Cumberland County, the Harrisburg Academy of Medicine has lost an honorable member; one with whom association as a fellow was at once a pleasure and a benefit; and, the faculty of medicine, a gentleman of professional ability. His patients are by this death deprived of a skillful practitioner of medicine and surgery, besides a prudent and judicious advisor; and, also the community in which he lived, a useful and worthy inhabitant. Therefore be it

Resolved, That we extend to his bereaved family the cordial condolence, and to the community the sincere sympathy of the Harrisburg Academy of Medicine.

J. B. McAlister,
Hugh Hamilton,
M. L. Wolford,
Committee.

In Memoriam—Henry E. Musser, M. D.

(The following memorial and resolutions were adopted by the Lancaster City and County Medical Society.)

Your committee appointed at the meeting of the Lancaster City and County Medical Society to draft a suitable memorial on the death of our late member, Dr. Henry E. Musser, begs to report as follows:—

Dr. Henry Elmer Musser was born in Stratsburg Township, Lancaster County, February 17, 1852. His early education was received in the public schools, at the Millersville State Normal School, and at Saunders Institute, Philadelphia, and he was graduated from Jefferson Medical College, Philadelphia, in 1875. He started in practice at Centerville, Lancaster County, and continued in practice at this place for some time, when he removed to Witmer, where he continued in active practice until the time of his death, which occurred suddenly, September 22, 1906, from angina. He was a member of the Lancaster City and County Medical Society, the Medical Society of the State of Pennsylvania and the American Medical Association.

Dr. Musser was a man standing high in his profession, and was held in the highest esteem in the community in which he lived, not only as a physician but as a gentleman.

He is survived by a widow and three sons.

Your committee offers the following:

"*Whereas,* Death has removed from our midst, an honored and beloved member of our society in the person of Dr. Henry E. Musser, therefore be it

Resolved, That this society feels the loss of our fellow member and desires to place on record our appreciation of him as a studious, accomplished and conscientious physician, and as one who stood high in the community in which he lived as a citizen, as well as in his profession.

Resolved, That we extend our heartfelt sympathy to his bereaved wife and family, and spread these resolutions on the minutes of this society.

J. Henry Musser,
John L. Atlee,
Park P. Breneman,
Committee.

In Memoriam – George N. Swartz, M. D.

(The following memorial note was reported at a meeting of the Northampton County Medical Society, September 21, 1906.)

The Northampton County Medical Society mourns the loss of one of our most esteemed associates, Dr. George N. Swartz. He was taken sick April 26, with cerebral hemorrhage, and died at his home in Pen Argyl, May 23, 1906, aged fifty-five years and three months.

Dr. Swartz was born at Lehigh Gap, Northumberland County, and was a son of Jacob and Susie Swartz. His early education was received in the district schools. He took an academic course at Mt. Pleasant Seminary, Boyerstown. Later he entered Palatinate College, Meyerstown. He also took a course of study at Ursinus College, Montgomery County. Having finished his studies he began the study of medicine in the office of Dr. G. T. Fox of Bath, Penn. He graduated from Bellevue Hospital Medical College, New York, in 1875. In the autumn of 1875 he entered Jefferson Medical College, Philadelphia, and received a degree from that institution in 1876. In the month of July of the same year he located at Ackermansville, this county, where he remained seven years practicing his profession. At this time the borough of Pen Argyl commenced to boom. He felt that a change would be advisable, grasped the opportunity and moved to Pen Argyl where he remained until the end came.

Dr. Swartz was a close student, a skillful physician, a useful and honored citizen. His noble qualities endeared him to his many patrons who keenly feel his loss. His religious affiliation was with the Presbyterian Church. As a society, we have lost an honored member, and we deem it meet and fitting that we place on record an expression of the regard and esteem we feel for him.

We extend to his bereaved widow and sorrowing daughter our sincere sympathy. And we ask that this tribute of respect be spread upon the minutes, a copy be sent to the bereaved family, and that it be published in the Pennsylvania Medical Journal.

G. T. Fox, Chairman.
C. F. Stofflet.
A. A. Seem.
Committee.

TREATMENT IN THIS VICINITY OF PULMONARY TUBERCULOSIS.

Hamilton D. Wey, Elmira, N. Y., contends that the home treatment of the disease in its early stages at points not far removed from where the disease either developed or was recognized is greatly preferable to sending the patients long distances from home where they will have the added suffering from nostalgia. He proves that tuberculosis can be treated under favorable conditions on the hills of Yates, Steuben, Allegany, Chemung, and Broome counties, also other counties of New York.—*American Medicine,* January 27, 1906.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X. No. 3. | Athens, December, 1906. | Subscription : $2.00 Per Year.

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Original Articles.

THE PATHOLOGY OF DISEASES OF THE THYROID GLAND.

BY GEORGE P. MULLER, M. D.,

Instructor in Surgery in the University of Pennsylvania, Assistant Surgeon to the University and Philadelphia Hospitals, Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The classification of the benign enlargements of the thyroid gland into groups dependent upon the clinical, gross, and microscopic appearance is difficult, and many of the existing classifications are confusing, often leading to inaccuracies in diagnosis and treatment. Presupposing an acquaintance with the anatomy and histology of the gland, the various affections should be grouped clinically into: (1) Hypertrophies, (2) tumors, (3) cysts, (4) inflammations. These main types will contain certain subdivisions, the exact order of which is grouped at the end of this paper but for obvious reasons are discussed in the order in which they bear a relation to each other.

1. *Hypertrophy*: *simple hypertrophy, exophthalmic hypertrophy.* Simple hyper-

trophy of the thyroid gland is a very nearly uniform enlargement, especially common in young people, and caused partly by an increase of the solid elements of the gland, but mostly by a hypersecretion of colloid material distending the vesicles. It is the type commonly called parenchymatous or colloid goiter, and is easily recognized, as a rule, both clinically and upon examination of the removed growth. Such hypertrophies are frequently seen at puberty, sometimes during menstruation and occasionally the onset of a goiter dates from a pregnancy, this physiologic hypertrophy, if it may be so-called, disappearing during early adult life or remaining as a permanent enlargement. An examination of any series of cases of diffuse goiter reveals the fact that they are of long standing and almost always date from early life. During the progress of time, certain degenerative changes frequently take place which give rise to a goiter considered as a type, serving to efface the primary origin, a fibrous goiter is thus merely the thickening of the stroma, and a calcareous goiter is due to the deposition of lime in the hyaline connective tissue, both originally being simple hypertrophies of the parenchyma.

When removed a simple goiter or simple hypertrophy resembles the shape of the normal gland, although one lobe, usually the right, may be the larger. The external surface is nodular, rarely smooth, and upon section the goiter is seen to be of a grayish yellow, or reddish brown color. It has a soft, spongy, sticky feeling; the distended vesicles can usually be plainly visible and the colloid material made to exude by pressure. In addition areas of hemorrhage, small cysts, masses of colloid, calcareous nodules, or a fibrous overgrowth may be perceptible. Microscopically, such a goiter consists of large vesicles, lined with a simple layer of cuboidal epithelium and containing a colloid substance staining red with eosin. Some blood corpuscles or cholesterin crystals may be found within the vesicles, and the action of the alcohol in preparation may shrink the colloid, producing certain artifacts over which considerable controversy was once waged. The connective tissue stroma is fairly abundant and contains blood vessels and frequently, in old goiters, evidence of an inflammatory reaction. Sometimes a distinct area of hyperplasia may be observed which must be considered as of recent formation and distinguished from malignancy.

The exophthalmic hypertrophy presents such a diverse clinical picture from the one just described that a consideration of the pathologic changes will be postponed until the adenomata and cysts have been discussed.

2. The *tumors* of the thyroid gland are both benign and malignant, *i. e.*, adenoma, carcinoma, and sarcoma. It is a curious fact that adenoma is rarely diagnosed clinically, most of these tumors being simply called goiter by surgeons, and the symptoms which they produce are considered together with the simple hypertrophy. Their asymmetry rarely produces any symptoms except tumor and consequently surgical treatment may be delayed until malignant transformation renders a cure impossible. "For this reason, every asymmetrical enlargement of the thyroid gland in individuals over thirty years of age should be subjected to immediate operative removal" (Bloodgood). Some mistakes will perhaps be made and a simple hypertrophy in which one lobe is especially prominent may be diagnosed as an adenoma, but such an error is less serious to the patient than the development of a carcinoma from an adenoma.

An adenoma may be defined as a solid, encapsulated, nonmalignant tumor of the thyroid gland, constituting the type of the unilateral goiter. It is situated within one of the lobes of the gland, and, while definitely encapsulated, the normal thyroid tissue is sometimes so compressed as to form a part of the capsule of the tumor, and the entire lobe may be removed as a solid mass.

Adenomas are soft, usually smooth on the surface and upon section of a yellowish-red or pink color. They are commonly the seat of hemorrhage and the blood is manifest as a diffuse discoloration of the tumor, or in definite localized collections. Cysts arising from softening in an adenoma frequently occur, and most observers agree that cystic disease of the thyroid gland almost invariably results from degeneration and softening of adenomatous tissue. The variety of adenoma known as a papilliferous cystadenoma has a rough section surface and in a specimen received in the surgical laboratory from Dr. Martin's service I was able to at once diagnose the tumor because of the remembrance of a picture in an article by Pratt.

The examination through the microscope of sections of adenoma shows such diversity of structure as to readily lead to the confusion which exists in the classification, but three distinct types can usually be recognized,—a fetal adenoma, a mixed adenoma, and a papilliferous cystadenoma.

The fetal adenoma resembles the structure of the fetal thyroid and reveals a mass of solid vesicles closely packed together, containing no colloid, and a scanty connective tissue stroma. The latter is often replaced by considerable colloid or mucoid tissue between the vesicles, and hemorrhage is nearly always observed. In some areas masses of cells are found, interacinous, without the shape or enveloping membrane of a vesicle.

The mixed adenoma consists of groups or masses of vesicles, lined by a columnar epithelium containing no colloid, and groups or masses of vesicles also lined by columnar epithelium which are more or less widely distended with colloid; in other words, a mixed adenoma resembles both the fetal adenoma and the simple hypertrophy mixed together. The cells are columnar and tend to desquamate into the alveolus; hemorrhage is common; the connective tissue is scanty, and often a hyaline-like material replaces it. This hyaline change is considered by Wölfler to be due to the rupture of the follicles and the escape of the colloid into the interstitial tissue, and is termed by him, "adenoma myxomatosum." There is distinct evidence of hyperplasia and no simple distention of the vesicles with colloid characteristic of simple hypertrophy. This type is sometimes called colloid adenoma, the use of the term "mixed adenoma" being restricted to those specimens where fetal-like thyroid tissue is present, but in my experience if a number of sections be examined the closed vesicles can always be made out.

The papilliferous cystadenoma is an uncommon variety which is important because of its close relation in the carcinoma. It was first carefully described by Wölfler in 1883. Low, in 1903, was able to collect but nine cases from the literature, but, as he added six and I have observed four it is probable that this type is not so rare as commonly supposed. Microscopically, there are observed large and small cystic spaces surrounded by dense connective tissue and containing intricately formed branched papillary processes lined by a columnar epithelium. The stroma may be myxomatous. Occasionally this tumor gives metastasis, or recurs locally after removal and should therefore be considered as mildly malignant; in a case recorded by Barker the patient underwent many operations during eighteen years for recurrence; care should be exercised in removing such a growth to avoid dropping pieces of the tissue in the wound. The thyroid adenomata illustrate the much disputed point as to whether metaplasia of one type of epithelium into another can occur, because the thyroid during its development does not contain cylindrical epithelium and the existence of such can only be explained upon this hypothesis.

3. *Cystic disease* of the thyroid gland is quite common but is so closely associated with the lesions just described as to merit but little in the way of separate description. Clinically, we may encounter multiple and single cysts depending upon whether the entire gland is converted into a mass of cysts or whether a unilateral tumor is produced by one large cyst, the latter being the more common because about seventy-five per cent. of cysts arise from softening in a preëxisting adenoma. Simple cysts occurring in apparently normal glands are rarely encountered, and cystic dilatation of portions of a simple hypertrophy are not often of sufficient size to be recognized clinically. Hemorrhagic cysts are frequently referred to, especially in the older literature, but it is very probable that most of these were simply hemorrhage into a preformed cyst and it is interesting to recall Kocher's statement that sudden hemorrhage into a cyst may be very difficult to diagnose from malignant disease. As a result of trauma, sufficient bleeding may occur into the gland, which, forming a tumor, subsequently softens and becomes cystic, but, as has been remarked, they are uncommon.

The most common method of cyst formation is the softening of solid adenomata, the liquefaction sometimes continuing to such a degree as to form a pure cystic cavity, in the walls of which traces of the original tumor may be found. Papillomatous growths in the intima of the wall have given rise to the name, papilliferous cysts, but these are not similar to the papilliferous adenocystoma previously described and which are analogous to the corresponding tumor of the ovary. The wall of these cysts is composed of the compressed adenomatous tissue, then a fibrous layer representing the capsule of the adenoma and outside this the originally compressed thyroid tissue. Areas of calcification are sometimes observed, especially in the hyaline-like tissue due to organized blood clot. The cysts contain colloid usually mixed with blood, and some cholesterin crystals, the contents varying in color from a clear watery fluid to various shades of red or brown and in consistency may resemble jelly, especially if opened after hardening. We have seen two cysts in the surgical laboratory which were outside of the thyroid gland; in one, a patient operated upon recently by Dr. Frazier, the right lobe containing a number of cysts was extirpated. It was then seen that a mass, presumably glandular, remained above and close to the angle of the jaw, and, when this was enucleated and opened, it was found to be a tightly distended cyst. In the second case, operated upon by Dr. Henry Norris, a cyst was removed from above the isthmus and was thought to have a duct or tract leading up to the hyoid bone. In its wall goiter tissue was present, containing colloid.

The tumors and cysts of the superior accessory thyroids form a very interesting chapter and have been completely studied by Dr. Murphy last year. It would lead us too far afield to discuss them here. Hydatid cysts have been encountered but are very rare in this country. They are usually single and clinically and macroscopically resemble the ordinary cysts.

4. *Malignant disease* of the thyroid gland is encountered as carcinoma and sarcoma. Many of the reported cases bear an interesting relation to previous goiter, and Berry remarks that "even in cases in which there is no history of preëxisting goiter it will be found, upon examination after removal, that the tumor contains cysts, points of calcification, or some similar evidence of former disease." Ehrhardt believes that the inflammation, calcification, cystic formation, hemorrhage and necrosis found in old goiters, whether clinically apparent or

not, tend to act as chronic irritants. In the degenerated areas of the thyroid, the epithelium is frequently so atypical that a diagnosis between a benign growth and early malignancy is often very difficult, and in this atypical development lies the relation of previous disease of the thyroid to malignancy. Furthermore, Wölfler has shown that very frequently the parenchyma of the gland becomes atrophic as age advances, with a corresponding hyperplasia of the interacinous connective tissue; it is, therefore, possible that the production of sarcoma could be attributed to the occasional metaplasia of this tissue.

It is impossible to give an accurate description of an average specimen of malignant disease by which a diagnosis could be made grossly. They may greatly resemble degenerated hypertrophies, or adenomata, and only the lymphatic or neighboring tissue involvement would enable a surgeon to be certain. It is the clinical course that must always be considered together with the knowledge that any adenoma or old hypertrophy may become malignant.

Histologically, we find a squamous, a cylindrical, and an adenocarcinoma (sometimes called malignant adenoma). The squamous variety is quite rare and probably arises from epithelial remnants of the branchial cleft and not from metaplasia. The cylindrical cell carcinoma occurs in the thyroid as long drawn out tubules, lined by several layers of epithelium, and is characterized by a tendency to form sprout-like processes or distinct papillae. The tunica propria is absent and the secretion of the cells resembles colloid microscopically and by its staining reactions. The type of cell is here believed to be due to metaplasia. The adenocarcinoma may for a long time remain unnoticed, because the enlargement may not be apparent. The nature of the tumor, in fact, has first been recognized by its metastasis. The tendency of this variety of thyroid carcinoma to cause solitary bone metastasis is striking, while the slow growth of the secondary tumor is often of clinical significance. While, in general, surgeons do not operate upon bone metastasis, yet this variety offers hope because of its slow growth, the solitary foci and the usual freedom from pulmonary involvement. In the histological examination of these cases particular care must be observed, for instances are recorded in which malignancy was discovered after the microscopic diagnosis had been made. The diagnosis of adenoma should be made only when the entire tumor has been subjected to a careful examination and the indications of malignancy, *i. e.*, absence of a tunica propria, growth into neighboring organs and especially veins, multiple layers of epithelial cells and cylindrical cell lining of the gland tubules, are excluded.

Sarcomata are usually of the spindle or round cell variety although numerous other forms have been recorded. Grossly, the section surface varies from a red fleshy looking growth, as in the lymph-sarcoma and some of the round cell forms, to the more usual white or yellowish-white, smooth, fibrous-like surface with numerous prolongations into the surrounding gland.

The metastasis of malignant growths of the thyroid opens up one of the most interesting chapters in the study of this organ but which unfortunately can be barely touched upon. The lymph nodes are involved in about twenty-five per cent. of the recorded cases and it is important to remember that the enlargement of the nodes is of no material help in the early diagnosis, because those which first become affected are so deeply seated that detection is well nigh impossible. Another point worthy of note is the resistance of the capsule to metastatic involvement of the nodes in carcinoma, which forces the carcinoma into portions of the very rich thyroid blood supply and favors dissemination by the circulation. It is only when extracapsular growth occurs that the lymphatic metastasis is favored. Of the organs and tissues of the body, the metastasis involves the lungs and bones most commonly, and of the latter the skull and inferior maxilla most frequently. Metastasis to bone is not only a frequent but a very interesting complication of these malignant thyroid tumors, because this organ together with the breast and the prostate are practically the only ones in which metastasis to bone is commonly observed. It is difficult to understand why these organs have a predilection for the bone marrow unless one accepts v. Recklinghausen's theory that the sluggishness of the blood current in the wide venous capillaries favors the formation of mural thrombi by corpuscular elements; but this does not explain why carcinoma of the stomach or uterus, for instance, does not affect the bones more often. Another peculiarity is the frequent presence in the metastatic bone tumor of colloid material contained in normal or abnormal vesicles, in practically all cases, of course, the primary tumor being a carcinoma, not a sarcoma.

The pathological histology of the thyroid in *exophthalmic goiter* is in effect a compensatory hypertrophy, and the symptoms seem to depend upon nervous or secretory influences more than upon any primary changes in the gland. But in a typical case of Graves' disease the thyroid presents definite structural alterations which briefly are: "(1) A change of the epithelium from a low or cuboidal type to a high cylindrical form; (2) a gradual disappearance of the colloid material which seems to be one of the earliest evidences of beginning hypertrophy; (3) alteration in the size and form of the alveoli due to the hyperplasia and infolding of the epithelium; (4) increase in the vascular supply and in the connective tissue stroma" (Beilby). These changes may also exist in whole or in part in small foci of the gland and not throughout. Such cases are usually less severe and run a longer course. MacCallum failed to find any evidence of disease of the parathyroids in nine specimens, and the drift of present opinion seems to be away from the idea of their implication. Nervousness, tachycardia, and tremor may also be present in certain cases of cysts, adenomata and carcinomata, and have been ascribed by some investigators to nodular areas of hypertrophy. In the case of the cyst previously referred to there was marked tremor and moderate tachycardia, and no change in one parathyroid, which was also removed, was observed.

CLASSIFICATION OF THYROID LESIONS.

1 Hypertrophy:
    a. Simple hypertrophy.
    b. Exophthalmic hypertrophy.
2. Tumors:
    a. Angioma (vascular goiter).
    b. Adenoma: Mixed.
        Fetal.
        Papilliferous cyst.
    c. Carcinoma.
    d. Sarcoma.
3. Cysts:
    a. Simple.
    b. Hemorrhagic.
    c. Adenomatous.
    d. Hydatid.
4. Inflammations:
    a. Thyroiditis.
    b. Tuberculosis.
    c. Syphilis.
    d. Actinomycosis.

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CLASSIFICATION OF THE DISEASES OF THE THYROID GLAND AND THEIR ETIOLOGY WITH SPECIAL CONSIDERATION OF CRETINISM AND MYXEDEMA; THERAPEUTIC USES AND ABUSES OF THE THYROID GLAND.

BY THEODORE J. ELTERICH, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

When we take into consideration that both the physical and mental development of the growing human being, as well as the functions of the secretory organs of the adult, are dependent upon the thyroid gland, a more accurate knowledge than heretofore possessed of the diseases of this organ is demanded of the physician.

The diseases of the thyroid gland may be classified under the following captions: (1) Congestion, (2) inflammation (thyroiditis), (3) neoplasms, (4) simple hypertrophy (goiter), (5) exophthalmic goiter (Basedow's, Graves', or Parry's disease), (6) cretinism and myxedema.

1. *Congestion.* An enlargement of the gland is often seen in young girls, at the onset of menstruation, due to a simple congestion. It may persist for a few months, but, as a rule, it disappears completely.

2. *Thyroiditis.* An acute thyroiditis is seldom a primary affection. It usually occurs as a complication of one of the acute infectious diseases; such as typhoid fever, scarlet fever, diphtheria, pneumonia, rheumatic fever or mumps.

3. *Neoplasms.* The tumors of the thyroid are cysts, adenomata, cancer and sarcoma. Fragments of thyroidal tissue are sometimes found at the root of the tongue, in the mediastinum and even in the pleura. They may form tumors of considerable size.

4. *Goiter.* Hypertrophy of the thyroid occurs sporadically and endemically. Heredity, sex, climatic or geographical conditions are etiological factors in the production of goiter. The disease occurs endemically in certain parts of Europe, especially in Cantons Waadt and Wallis, Switzerland; also in Central Asia, and in this country in certain parts of Michigan and Pennsylvania. There can be no question that local conditions of some kind are at fault, but very little is known regarding the exact nature of these conditions. The drinking water has always been held responsible, but it is certain that magnesium and calcium salts do not possess the importance ascribed to them.

5. *Exophthalmic Goiter.* Nothing definite is known regarding the causation of exophthalmic goiter. The neurotic nature of the disease is generally admitted and changes in the medulla oblongata have been found in a few autopsies. Sudden mental shock, worry and grief, and physical fatigue are assigned as exciting causes. The disease is regarded by some as the result of an over-production of the thyroid secretion, and the striking results of the recent treatment of myxedema have given rise to the belief of a possible antithetic relationship between the two conditions. This view has been particularly urged by Möbius and Greenfield. The latter has shown that the changes in the gland are proliferation with production of new tubular spaces and absorption of the colloid matrix to be replaced by a more mucinous fluid.

It has been found that thyroid extract in excessive doses produces tachycardia, tremor, headache, sweating, and prostration, symptoms not unlike those of exophthalmic goiter, and when administered in this disease aggravates the symptoms. Clinical investigations, based on the theory that exophthalmic goiter is due to defective action of the parathyroidal tissue, have also been made. It has been found that when the parathyroids have been destroyed, tetany and other nervous symptoms have developed,—phenomena also observed in exophthalmic goiter, and it has been thought that this disease, itself, is due to insufficiency of the parathyroidal tissue (Moussu). Both thyroidal and parathyroidal tissues combined, and parathyroidal substance alone, have been used for the treatment of exophthalmic goiter, but the results have proved unsatisfactory.

6. *Cretinism and Myxedema.* Cretinism may be regarded as a disturbance of nutrition due to loss of or an impairment of the thyroid gland. There are two forms, the endemic and the sporadic. Endemic cretinism is almost unknown in the United States and Canada. It occurs in the mountainous portions of Europe, Asia, India, South America, and Mexico. It has been found that goiter is present where endemic cretinism occurs, and it is probable that the two affections bear a definite relation to each other. Sporadic cretinism occurs anywhere, many cases having been reported all over Europe and in this country.

While we know that both forms of cretinism depend on absence or atrophy of the thyroid gland, or some impairment of its function, we are still in ignorance as to the causes which produce this atrophy. Intermarriage, alcohol, syphilis, and tuberculosis have been considered as possible factors in the production of cretinism, but no definite connection can be traced between them.

Symptoms. The symptoms of cretinism usually make their appearance during the first year, but are often so slight that the condition is rarely recognized before the infant is six or seven months old and sometimes not until the seventh or eighth year.

The disease is characterized by an arrest of psychic and physical development. The expression of the face shows a lack of intelligence. The nose is broad and depressed at its root, giving it the appearance of a saddle. The lips are thick and everted and the tongue protrudes. On each side of the neck are cushions of fat. The abdomen is prominent, and umbilical hernia invariably is present. The limbs are short and out of proportion to the body. The skin presents a very characteristic appearance; it is usually glossy, and the hair is very coarse. The temperature is subnormal. The sexual organs are usually atrophied. In young infants dentition is delayed and sutures and fontanelles remain open long after the period when they are usually found closed. Chronic constipation is the rule. The foregoing symptoms manifest themselves gradually and become more distinct with advancing years. The appearance of cretins is so striking that once seen, either in life or illustration, the condition can hardly fail to be recognized. They all look so much alike that one would think that they belonged to one and the same family.

Until within recent years these cases have been considered hopeless. A sufficient number of cases have now been recorded to show that the administration of thyroid extract results in a return to growth and development approaching the normal.

Myxedema. The term myxedema is applied to a peculiar disease first described by Gull and Ord and which is characterized by a myxedematous condition of the subcutaneous tissues, mental failure, and atrophy of the thyroid gland.

Patients suffering from this disease present a striking appearance. The size of the body is increased by swelling of the skin, which is dry and rough but does not pit on pressure. The expression of the face is altered, the features becoming coarse and broad, the lips thick, and the nostrils expanded. Defective memory, slowness of thought and movement, hallucinations, delusions, leading to a final condition of dementia, is the history of some cases. The temperature is often below normal. Albuminuria or glycosuria may occur. The thyroid gland is diminished in size and may become completely atrophied. The course of the disease is slowly progressive and may last ten or fifteen years. Death is usually due to some intercurrent disease, most frequently tuberculosis. (Greenfield.)

Operative Myxedema. By the term operative myxedema or cachexia strumipriva is meant a condition of myxedema the result of extirpation of the thyroid gland. This condition has only been recognized since 1882, and all our present knowledge regarding the disease of the thyroid gland is due to the startling results of the studies of Horsley, Murray, Kocher, and others.

Therapeutics. Thyroid gland or thyroidin has served more than any other similar substance to establish organotherapy upon a firm basis. The results are most astonishing in myxedema in its various forms, and in cretinism many cases become completely cured by the use of the preparations of the thyroid gland. The use of the thyroid preparations has not been limited to the treatment of the diseases associated with disturbances of the thyroid gland, but has been extended to quite a large number of conditions which have no associations with thyroid perversion.

Gabriel Gauthier has made most interesting observations on the beneficial influence of the use of thyroid medication in delayed union in fractured bones. Some improvements have also been recorded in osteomalacia, rachitis and rheumatoid arthritis. Thyroid medication is also recommended in various chronic disease of the skin, notably eczema and psoriasis. Many other conditions are thought to be benefited by thyroid therapy—eclampsia, epilepsy, tetany, hemophilia, obesity, cancer of the breast, etc. It is also useful in the treatment of infantilism, but the results in Mongolian idiocy are unsatisfactory.

Contraindications. Indications against the use of thyroid preparations are weakness of cardiac action, albuminuria or glycosuria. Coincidental tuberculous disease or a suspicion of grave renal or hepatic disease should cause hesitation to prescribe the drug.

In all cases undergoing thyroid treatment, close supervision is required especially in the early stages, until observation has shown whether the patient is tolerant or not. It is important to notice the earliest symptoms of intolerance of the drug or thyroidism. Tachycardia, headaches, vertigo, syncopal attacks, delirium, tremors, insomnia, fever, nausea, vomiting, diarrhea, and wasting are the usual symptoms indicating excessive doses.

Preparations and Administrations. Many preparations are now in the market, but it makes little difference how the gland is administered. It may be given in the form of the fresh gland of the sheep, the dried gland, glycerin extract or iodothyrin. The fresh gland may be given raw or slightly cooked in doses of from one eighth to one half of a gland a day.

The dried gland and the extract, however, are more convenient and just as potent and are given in the following doses:—

Thyroideum siccum 1-5 grains (0.06—0.3 gm.).
Liq. thyroidei, Br.P., 5-15 minims (0.3—1.0 cc.).
Tablets iodothyrin 2-10 grs. (0.13—0.6 gm.).

These are the doses for adults and may be given two or three times daily. In children from four to seven years of age, one third, and in those from seven to fourteen, one half the adult dose should be given.

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SURGERY OF THE THYROID GLAND.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The limit of time imposed upon me, ten minutes, will prevent a detailed review of the surgery of goiter, and I shall therefore confine my remarks to three headings of surgical interest: First, the mortality from operation, for surely a consideration of this point is important to any individual case under treatment; second, indications for operation; and, third, technic of the operation.

Mortality. Death takes place usually as the result of one of the following conditions: During the operation from hemorrhage, shock, exhaustion, collapse of the trachea, and perhaps from the anesthetic; after operation, from acute thyroidism, tetany, infection, late shock, pneumonia, and occasionally from one of the remote accidents to which all surgical procedures are subject.

In simple goiter of an adenomatous, cystic or colloidal nature, the lowest mortality in a large number of cases has been obtained by Kocher. His results are about four tenths of one per cent. In this country the mortality from operation in the hands of our best surgeons is somewhat higher, nearer one per cent., owing perhaps to the fact that their experience compared with Kocher's is extremely limited, and they have opportunities to operate on comparatively a small number of cases. In benign cases where there is some peculiarity of the growth or of its position, as extending into the mediastinum, or where the patient has been subjected to treatment producing adhesions of the gland to the surrounding structures in the neck, like the x-ray, the mortality will be slightly increased, perhaps to nearly two per cent. In Graves' disease the operative mortality is greatly increased, and stands somewhere between twelve and fifteen per cent. In the presence of malignancy the mortality is still higher and the immediate death rate is twenty per cent., or more, while ultimate recoveries are very few.

Indications for Operation. In simple hypertrophy the onset of the disease is usually before the twentieth year, and operation is not indicated unless the rate of growth is very rapid or pressure symptoms ensue. In this variety there is usually a slow enlargement of the thyroid gland, covering a period of perhaps two or three years, after which the enlargement remains stationary or even diminishes. Should enlargement again take place after years of quiescence, operation is indicated, even though pressure symptoms are absent. This later growth would indicate that the simple hypertrophy had changed into a cystic, adenomatous or colloid growth, or perhaps into malignancy.

In benign growths which are quiescent and without symptoms, except for the cosmetic defect, the choice of operation should be left to the patient after the various possible terminations of the condition have been explained to him. Should such a tumor again take on growth, operation would then be indicated.

In Graves' disease operation is indicated only when systematic medical treatment and the use of a specific serum (Rogers) have failed to improve the condition after a trial of from four to six months, or when the patient is growing worse under such treatment. As long as there is improvement under medical régime we can not conscientiously advise an operation, knowing the mortality to be somewhere about fifteen per cent. When Graves' disease develops in a benign enlargement of the thyroid, to my mind, operation is always indicated; and if the whole gland is involved I think the two lobes should be removed at different times, allowing an interval of two or three weeks between the operations. In these cases the systemic symptoms of Graves' disease are generally not so pronounced as when it occurs in a healthy gland, nor is the mortality so high. In other words, when the gland is already the seat of a benign enlargement, the remaining healthy glandular tissue, which takes on the pathologic changes of exophthalmic goiter, is reduced in quantity, and the altered secretion of the gland is therefore correspondingly less.

In malignant disease the immediate mortality is so high and the ultimate recoveries so few that the individual case must be very carefully considered before operation is undertaken. Metastases are prone to take place very early and are sometimes present before the patient notices any enlargement or pain in the thyroid region. It will, therefore, be seldom that an operation is done with the hope of an ultimate cure. When pressure symptoms are present, operation will become imperative for the prolongation of life, but when the patient is feeble and old and pressure symptoms are wanting, many a case will live longer and in greater physical comfort without operation. When operation is undertaken, the entire gland should be excised, and frequently also the lymphatic glands of the neck removed.

Technic of the Operation. Hemorrhage is one of the immediate dangers of the operation; therefore the patient should be placed in such a position that the venous circulation will be aided by gravity. In a semi-sitting position the large veins in this region of the neck will be more or less flaccid, and not distended nor engorged with blood. The smaller veins may entirely collapse, so that when severed no blood will escape. It is, therefore, well to change the patient to full recumbency before the operation is completed; these smaller veins which have previously escaped notice can then be seen and ligated.

Anesthesia. While the dangers to the patient may be slightly increased by a general anesthetic, particularly in patients very ill with Graves' disease, I feel that this risk should be assumed and ether anesthesia given. I have seen perhaps two dozen cases in this country and in foreign clinics where the operation was undertaken under local anesthesia, and in several of these, a general anesthetic had to be resorted to before the operation was completed, while the remainder showed signs of great physical pain by cries and moans, hurried breathing, and tugging at the cords which bound them to the operating table. When one fourth of a grain of morphin is given hypodermically fifteen or twenty minutes before the operation, but a small amount of ether will be required to produce anesthesia, and it can readily be discontinued on the appearance of the first untoward symptom. The risk seems to me so slight that I have always accepted it, and so far with no bad results. I would not undergo such an operation under local anesthesia, and I can not, therefore, recommend it to my patients.

Incision. When the tumor is small, the collar incision recommended by Kocher is preferable, and the resulting scar will be scarcely noticeable if one of the natural creases of the neck is followed. When the tumor is large, and especially when it extends beneath the sternum, a more deeply curved incision will be needed, so that the bottom of the shallow U-shaped incision will be close to the sternum while the two upper limbs will end at the inner border of the sterno-mastoid muscle on a level with the upper portion of the tumor. The flap which is raised includes the skin, superficial fascia and platysma muscle. Beneath the platysma the branches of the anterior and external jugular veins will be found. These may at once be doubly ligatured or divided between artery clamps. If the surgeon is in the habit of turning over to an assistant the completion of the operation after the tumor is removed, artery clamps will very much shorten the time of his work; but, if he completes his own operation, time will be saved by at once ligating instead of clamping the larger veins.

The sternohyoid, sternothyroid and omohyoid muscles will now be visible, and if they can not be conveniently drawn aside they should be divided near their insertions and reunited with catgut sutures before the operation is completed. After division of these muscles we come upon the false capsule of the gland, which is a layer of the deep cervical fascia. Between this fascia and the true capsule of the gland, there are frequently many veins which will require ligature. This fascia is divided to the full extent of the tumor and all severed veins carefully ligated. The gland is now fully exposed within its capsule, and it is examined to see which of the two following procedures will be better; viz, enucleation or resection. If a small number of cysts or adenomata are found to cause the enlargement, they may be enucleated by incising the capsule and shelling them out. When there is a single cyst, its contents should be evacuated through a small incision in the capsule, and, when emptied, its wall enucleated. Thyroid tissue is so vascular that it is well to make the incision into the capsule as small as possible, for it will give less hemorrhage and require fewer ligatures. If the whole lobe or gland is found to be diseased, or the case is one of Graves' disease, a partial resection, or excision of the lobe is indicated. This may be done in one of two ways:—

The middle thyroid veins are ligated and severed, and the lobe to be removed is dislocated forward and the dissection is made upward and outward to secure the superior thyroid vessels. This separation is best done with gauze. The proximal ends of the vessels are ligatured while the distal portion which comes away with the tumor is clamped, the vessels divided, and the dissection carried downward to the inferior thyroid vessels, which are ligated and divided in the same manner. This ligature must be very carefully placed as the vessels are in close relation with the recurrent laryngeal nerve. The growth is then freed from its attachments to the trachea up to the isthmus, which is crushed with a Kocher's clamp, a ligature applied and the tumor cut away. The gland during these manipulations is handled as gently as possible, the important points being to ligate all the vessels before severing them, when they can be reached, and to expose and recognize the recurrent laryngeal nerve so that it will not be injured. If a sudden hemorrhage should take place during the operation from the tearing of some large vessel, it is dangerous to apply hemostatic forceps indiscriminately, not knowing what tissues they grasp; and under such circumstances, it is safer at once to dislocate the gland forward and control the superior and inferior thyroid arteries with clamps.

In the other method the isthmus is at once separated from the underlying trachea, crushed, and divided between two ligatures. The lobe to be removed is then gently freed from the trachea, and the dissection continued backward and toward the upper pole, great care being taken not to tear the friable veins. When the larger branches of the superior thyroid artery are reached they are ligated and severed and the upper attachments of the thyroid divided. The tumor is then turned downward on the neck and the dissection continued until the inferior thyroid vessels are exposed, ligatured, and divided. The tumor is now practically free, except perhaps for one or two veins which may lead towards the mediastinum. These, of course, will require additional ligatures. This latter method may be preferable when the trachea is much compressed, for it at once relieves the constriction; but the hemorrhage is more free, as you are working towards the blood supply of the gland instead of controlling it at the beginning.

When the gland is firmly adherent to the trachea and region of the recurrent laryngeal nerve, the capsule is incised and allowed to remain as a protection to this nerve.

After removal of the gland the patient is lowered to a full recumbent position and a search is made for any small divided veins which may have escaped notice. As these tissues are so vascular there will always be a moderate amount of oozing following an operation, and this should be taken care of by suitable drainage either with a small rubber tube or a cigarette drain.

In Graves' disease, drainage is particularly important, as according to our present knowledge, the absorption of the wound secretions is largely responsible for the acute manifestations of thyroidism which come on during the first twenty-four or forty-eight hours after operation.

After the toilet of the wound is made, the muscles which have been divided, together with the layer of deep cervical fascia, are united with catgut and the incision closed either by subcutaneous sutures or interrupted sutures. I am not sure which of these will give the best cosmetic effect as I have had equally good results with both methods of closure.

In concluding this very brief communication permit me to say, (1) that in cases of malignant degeneration of the thyroid I fear there has been too much radical surgery. Often the disease progresses far before a positive diagnosis is made, and many a radical operation has been undertaken when a perfectly hopeless condition was present. When pain is severe and respiration embarrassed, palliative surgical procedures become justifiable and even imperative; but it is certain that, for a better operative result in cases of malignancy, the diagnosis must be made earlier by the general practitioner, when there is a probability of success. If the condition is not recognized until late in the course of the disease, these cases should be treated symptomatically and with the least amount of surgery that will give relief. (2) While surgical treatment of malignancy of the thyroid may have been too radical, I believe that the profession is not sufficiently aggressive in its treatment of benign thyroid disease. It must be remembered that when surgical procedures are undertaken early in benign enlargements, operation is simple and the mortality small; when they are allowed to pursue their natural course, Graves' disease not infrequently develops, and, in communities where goiter is endemic, malignant disease of the thyroid is common. The treatment of such enlargements by counter-irritation and by the *x*-ray does no good, and frequently does harm by producing fibrous tissue and adhesion of the gland to the surrounding structures of the neck, so that when such a case comes to operation the difficulties of a removal are greater and the mortality correspondingly higher. I therefore feel that the majority of these benign cases should be operated on before a more serious condition can be engrafted.

THE DIAGNOSIS AND MEDICAL TREATMENT OF GRAVES' DISEASE AND HYPERTHYROIDISM.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Though certain chapters in the pathology of Graves' disease are still incomplete and may perhaps require extensive revision, a measurably satisfactory solution of some aspects of the problem has been reached and several of the older hypotheses regarding the pathogenesis have been finally disproved. In view of the conspicuous character of certain symptoms, such as cardiac excitability, nervous manifestations, and goiter, it is not remarkable that different investigators have been led to regard the circulation, the nervous system or the thyroid gland respectively as the seat of the fundamental pathologic lesions or disturbances. As far as the heart and circulation are concerned, there is little reason at the present time to regard the syndrome of Graves' disease as in any sense the result of primary cardiovascular disorders. The occurrence of some thyroid enlargement and other symptoms in cases of heart disease, to which I shall again allude, does not constitute sufficient ground for regarding the association a common or important one. The hypotheses that have localized the fundamental lesions of Graves' disease in the nervous system have been varied. Some authors have held that disease of the sympathetic nervous system is the essential pathologic condition; others have located the trouble in the ganglia in the neighborhood of the fourth ventricle or in the medulla. In part these hypotheses rest upon speculation, in part on more or less demonstrative experimental evidence. There can be little doubt that certain injuries of the nervous system may occasion some of the symptoms or possibly even the whole clinical picture of Graves' disease just as section of the vagus may occasion pneumonia, but there is almost as little reason to believe that a nervous lesion is necessarily associated with Graves' disease as that such an association is essential in pneumonia. The results of pathologic investigations and the clinical study of cases alike disprove the occurrence of any gross or demonstrable nervous lesion. It is undoubted, however, that continued depression or great nervous shocks often play a part in the causation of the disease and I have seen the complete picture of Graves' disease arise acutely in the course of a case of organic nervous disease (ascending paralysis). Some predisposing influence may with entire propriety be ascribed to functional or organic diseases of the nervous system.

It would have seemed natural had the enlargement of the thyroid gland been regarded as the essential pathologic lesion, and in a measure the name exophthalmic goiter indicates that from the beginning the goiter has been looked upon as the fundamental lesion. The frequency, however, of goiter unassociated with Graves' disease and the difficulty of accounting for all the symptoms on the basis of thyroid disease caused earlier authors to look for other conditions that might account for the enlargement of the gland as well as for the other symptoms. This no doubt accounts for the vitality of the nervous theories, some of which are held to the present day. Gradually, however, as knowledge of the internal secretions of various glands and of the thyroid in particular advanced, authors have taken up the thought that the thyroid disease might prove to be the essential pathologic condition. After the introduction of thyroid feeding for the treatment of myxedema, cretinism, obesity and various other diseases, facts were discovered that materially strengthened the belief of Möbius that the thyroid gland contained in itself elements that might account for the entire symptomatology of Graves' disease. It was found that excessive administration of thyroid extract may occasion palpitations, tremors, relaxation of the skin and general nervous symptoms so similar to the same class of symptoms witnessed in Graves' disease that the resemblance was highly suggestive of a similar causation of the symptoms in the natural disease and in the artificial intoxication. As the injection or feeding of thyroid extract does not cause exophthalmos the hypothesis lacks an important item, but there is some reason to believe that the secretion of the diseased gland differs in important particulars (amount of iodin) from that of normal thyroids, and therefore the results of feeding and those occasioned by disease of the gland are not strictly comparable. An analogous explanation (*i. e.*, the character of the secretion) doubtless accounts for the absence of symptoms of Graves' disease in many simple glandular goiters. Metabolic experiments indicate strongly the fundamental importance of excessive thyroid secretion in the pathology of Graves' disease. The great increase in oxygen consumption and output of CO_2 suggests thyroid hypersecretion, as the same metabolic disorder is produced by thyroid administration and can not be explained by the tremors and other symptoms. It is quite certain, then, that excessive and perverted secretion of thyroid products by the hypertrophied gland is a most important element in the pathology of the disease, and that some of the symptoms, if not all, are directly due to this cause. Let me refer to a clinical case of great interest, and unique as far as I know. It may be interpreted as having a bearing on the question now under discussion. A woman about forty years old with marked evidence of Graves' disease was under my care in the Pennsylvania Hospital. Exophthalmos, thyroid enlargement, tremor and palpitation were pronounced and had been present for over a year. The patient requested operation, but after some discussion with her husband concluded that its dangers were too great and decided against it. There was probably some excitement incident to this discussion, though it was not apparent. The next day she became suddenly delirious and later almost maniacal. All symptoms increased with the nervous excitement and during about ten days her condition was quite serious. After recovery from the delirium it was found that the tremor, rapidity of the heart's action and exophthalmos had almost wholly subsided and the thyroid gland was reduced in size to practically the normal. One could not well escape the belief that there had been an explosive discharge of thyroid secretion with temporary increase of all the symptoms, followed by gradual improvement in the general condition and disappearance of the goiter. Unfortunately the subsequent history of the case has not been obtainable, but the patient stayed in the hospital for a short time and remained practically well.

We may conclude, therefore, that a preliminary step in the wider knowledge of the pathology of Graves' disease has been taken and that we are justified in believing that excessive secretion of thyroid products is a fundamental condition of this disease. From what we have heard to-day regarding the morbid anatomy of the gland and from what can be learned on reviewing the literature of this subject, it is clear that the anatomical changes encountered in typical cases of Graves' disease are not always identical. Furthermore we must recognize that, in some cases of so-called simple goiter, imperfectly developed symptoms of Graves' disease sometimes present themselves. It seems evident,then,that the syndrome which we designate under the name of Graves' disease represents the reaction of the system to the excessive thyroidal secretion incident to possibly varied forms of disease of the gland. In the majority of cases, it is true that increased vascularization may be encountered and probably in every instance there is hypertrophy of the secreting or glandular elements of the thyroid. One does not find Graves' disease in cases in which the gland is specially sclerotic, calcified or disorganized by destructive new growths. When such lesions are present the clinical picture is more likely to be one approaching myxedema.

It is important to recognize that there are various transient alterations in the thyroid gland which may or may not be sufficiently marked to cause generalized symptoms. The effect of emotion, especially fright, and of some physiological functions, such as menstruation or pregnancy, on this gland is well known. Similarly in the course of diseases not especially involving the thyroid gland there may be reflexly or otherwise an enlargement and functional overactivity. Among the conditions thus influencing the gland that seem to me to have an important bearing on the question of diagnosis of Graves' disease, the following are important: (1) Anemia, especially chlorosis; (2) diseases of the heart, especially mitral valve disease; (3) nervous conditions, such as shock and the climacteric.

The Influence of Anemia on the Thyroid Gland. Very few cases of pronounced chlorosis have come under my observation in which there was not some fullness at the base of the neck due in part to enlargement of the thyroid gland. In some instances this enlargement has been sufficient to constitute an actual goiter. In these cases as a result of the anemic state and possibly also as a consequence secondarily of enlargement of the thyroid with hypersecretion, marked palpitations, tremor, a tendency to relaxation of the skin and even prominence of the eyeballs are conspicuous symptoms. It would be very easy to diagnose marked cases as Graves' disease, overlooking the fundamental influence of the anemic state, and, in order to emphasize this relationship, the term pseudo-exophthalmic goiter or pseudo-Graves' disease has sometimes been proposed. In many of the cases of milder degree, the appearances suggest that the symptoms resembling those of Graves' disease are wholly the result of the anemia, but, in the more marked cases, one can not well escape the suspicion that the thyroidal enlargement has introduced a new element and that the condition represents an actual though perhaps mild form of Graves' disease. Those who are more particularly impressed with the significance of anemia as a general cause of varied symptoms would classify these cases as pseudo-Graves' disease and to establish the predominating importance of the blood disease would content themselves with pointing out that such cases are often quite readily curable by the vigorous administration of iron, arsenic, etc. On the other hand, clinicians less disposed to ascribe to anemia so important a rôle would be likely to regard these cases as cases of true Graves' disease with anemia as a concomitant condition. It seems to me a combination of these views expresses the truth. In the milder cases one may assume that the symptoms suggestive of Graves' disease are wholly the result of the anemia. In the more striking cases, however, the symptoms of Graves' disease develop after the anemia has reached a high grade and they appear to be commensurate with the degree of thyroidal enlargement. Therefore it seems probable that the latter is secondary and simply introduces a new element.

Heart Disease as a Cause of Thyroid Enlargement. In many cases of mitral valve disease as well as in cases of myocardial weakness with secondary mitral leakage, enlargement of the thyroid gland may be encountered. Sometimes other symptoms of exophthalmic goiter associate themselves with this thyroidal enlargement. I recall distinctly a case of this character occurring in a man of forty, which I saw some years ago. The patient had considerable hypertrophy of the heart with evidences of mitral valvular disease and the history as well as general clinical conditions showed that the cardiac trouble was an old one. More recently he had developed acute cardiac symptoms and at the same time enlargement of the thyroid gland, exophthalmos and other signs of Graves' disease. Under cardiac medication, he speedily improved and the relief of his thyroidal trouble and the consequential symptoms was commensurate with the improvement in the action of his heart. In this instance the clinical picture was distinctly that of well developed Graves' disease. In some other cases of heart disease I have seen symptoms of exophthalmic goiter present, though less marked than in the case just alluded to. It is not difficult to understand how, under favorable anatomical conditions, cardiac failure might develop extreme congestion of the thyroid gland and secondarily symptoms of hyperthyroidism. At the same time congestion of the orbital veins might produce a certain degree of exophthalmos. That these results are only infrequent consequences of cardiac disease may be due to the fact that specially favorable vascular conditions are necessary.

Nervous Conditions Causing Thyroid Enlargement. The acute onset of Graves' disease after sudden frights or shocks of various sorts has been generally recognized by writers. Some of the more violent cases of Graves' disease terminating in rapid death have had this causation. More frequently slight enlargements of the thyroid gland occur in susceptible individuals, particularly in young women, from the same sort of causes. The symptoms, however, in these lesser cases are transient and early recovery ensues. To the same group belong the instances of thyroid enlargement developing at the climacteric and the cases met with during pregnancy. These cases usually are very mild in their symptoms and favorable in prognosis.

Graves' Disease in Association with Primary Thyroid Disease. We may recognize three distinct forms: (1) Graves' disease supervening upon a simple goiter or other disease of the thyroid gland; (2) acute Graves' disease; (2) chronic Graves' disease, or the ordinary form.

Allusion has already been made to the occurrence of some of the symptoms of Graves' disease in cases of simple goiter and other thyroid diseases. It is extremely common to find a tendency to slight tachycardia, moderate tremor, nervous excitation, or other of the symptoms of Graves' disease in cases of ordinary goiter. Sometimes it is evident that these symptoms have become sufficiently pronounced to justify the diagnosis of Graves' disease. On the other hand when but one of these symptoms is present and is not particularly marked, there will be little hesitation in making the diagnosis of simple goiter. The fact that there are gradations and borderline cases indicates that the difference between simple goiter and Graves' disease is often only one of degree, and accepting the hypothesis that hyperthyroidism explains the syndrome, it is easy to believe that this difference of degree depends upon the amount and possibly the kind of thyroid secretion elaborated and discharged into the circulation. Thus a cystic or parenchymatous goiter might continue for a long time without evidences of Graves' disease but when from one cause or another increased activity of growth occurred, transformation of the simple goiter into the exophthalmic form might take place. We have already had our attention called by the speaker who discussed the pathological anatomy to the fact that in several of his cases of simple goiter or other thyroid diseases moderately developed symptoms of Graves' disease were present.

Acute goiter is a rare form in which violent symptoms including fever, extreme nervousness, delirium or mania and sometimes toxemic manifestations are present. Such cases may result from sudden shock or may arise without definite causation. There is nothing in the symptomatology that distinguishes these decidedly from the ordinary chronic cases otherwise than in degree.

Chronic goiter or the ordinary form does not of necessity begin with manifest thyroid enlargement. It does not of course follow that there was not present from the first excessive thyroid secretion and that whatever symptoms were present at the beginning were not the result of such hyperthyroidism. Tachycardia, tremor and general nervous symptoms or exophthalmos may sometimes initiate the clinical phenomena as far as conspicuous symptoms are concerned; but in most cases, goiter is the earliest symptom or at least is noticed from the very outset. It is of importance to recognize that the symptoms in these chronic cases of Graves' disease vary from time to time and one is perhaps justified in assuming that at different periods greater or less secretion of thyroid products takes place, or that greater or less quantities actually secreted in the gland are discharged into the circulation. I recall again the interesting instance before alluded to in which violent acute symptoms developed in a chronic case and then subsided leaving the patient much improved in every respect.

My purpose in discussing the subject of Graves' disease in the above manner has been to make it clear that we must recognize that the syndrome that constitutes this condition may occur in a more or less pronounced degree in transitory and benign affections of the thyroid gland as well as in the more permanent organic condition that usually occasions it. If this point has been established it will be evident that the accurate diagnosis of clinical cases will require a determination of the nature of the thyroid trouble and its probable permanency as well as the mere fact of the existence of the complex of symptoms. In other words, we must first recognize the symptoms which are now looked upon as those of hyperthyroidism and must then determine whether these have resulted from a trivial or more or less transient cause or whether they are due to an organic lesion in the thyroid gland such as is met with in classical cases of Graves' disease. If this discrimination were always made, one might arrive at a more satisfactory knowledge of the exact value of various methods of treatment, but, when certain remedies or other agents are employed without such discrimination, confusion must arise as to the precise value of the methods employed. I shall refer again to this when taking up the discussion of the treatment, but proceed now to sketch rather hastily the prominent clinical manifestations and the possibility of determining whether we are dealing with the milder and transitory forms of the trouble or with the severe and fixed types.

SYMPTOMS AND DIAGNOSIS.

We may classify the symptoms of hyperthyroidism and Graves' disease under the following heads: (1) Vascular phenomena; (2) nervous phenomena; (3) thyroid enlargement; (4) gastro-intestinal symptoms; (5) ocular manifestations.

Vascular Phenomena. Rapidity of the action of the heart, or tachycardia, is on the whole the most frequent of the circulatory symptoms. This may or may not be attended with irregularity, and on physical examination dilatation of the cardiac chambers causing changes in the character of the heart sounds or cardiac murmurs is frequently detected. Among the symptoms referable to the peripheral circulation, throbbing arteries, Corrigan's pulse, a capillary pulse, and even pulsating veins may be found. Very frequently on auscultation over the arteries a sound like Traube's sound in aortic regurgitation is heard, and sometimes a double murmur. Venous hums in the neck are exceedingly common and the bruit often described as occurring in the enlarged thyroid is generally produced in the dilated veins lying at the sides of or elsewhere adjacent to the goiter. A bruit in the gland itself is probably quite rare.

Sweating and paroxysmal flushing are evidences of the tendency to sudden vascular relaxation in the capillaries of the skin. It is common to find the palms of the hands and, to a less extent, the skin of the body generally quite moist. This condition occasions a symptom that was described by Charcot, namely, an increased electric permeability of the skin, as the result of which muscular contractions are obtainable in patients suffering with Graves' disease with milder currents than in healthy individuals.

Nervous Phenomena. The most important of these is the fine tremor of the hands and of the extremities generally. This varies from time to time with the severity of the disease. Other nervous symptoms are depression or, on the contrary, excitement, and in severe acute cases delirium or often maniacal symptoms.

Thyroid Enlargement. The thyroid gland is commonly sufficiently enlarged to be visible or may simply be palpably fuller than normal. The consistency of the gland varies according to the pathologic condition, being sometimes doughy or elastic when the change is of a parenchymatous type; almost fluctuating when cystic collections are present; and more or less hard when fibrous induration occurs. The last is infrequent for reasons stated before.

Gastro-intestinal Symptoms. Disturbances of the digestion and of the action of the bowels are frequent. Nausea and vomiting, abdominal pain and very commonly diarrhea are recorded.

Ocular Symptoms. Exophthalmos or protrusion of the eyes and the special symptoms known by the name of Graefe (failure of the upper lid to follow the eye ball as the patient looks down); Stellwag (retraction of the upper lid); and Möbius (parallelism of the axes of the two eyes and difficulty of convergence in accommodation) are important indications and are rarely wanting in marked cases.

Other symptoms might be added to these if completeness were aimed at but I have tabulated these for the sake of stating the more common manifestations. Not infrequently the symptom-complex is only partially developed but when several of the groups are present, and are more or less pronounced, it seems justifiable to regard the case as one of hyperthyroidism no matter what the exact pathologic condition of the gland may be. Thus, in a simple goiter or in certain cases of tumor of the thyroid gland when the circulatory and nervous symptoms develop, the clinician recognizes that the case borders on Graves' disease. Similarly in the trifling enlargement of the gland that results from anemia or nervous causes, the same line of thought is applicable.

The differential diagnosis between the milder forms and the ordinary type of chronic Graves' disease can be made only by a consideration of the antecedent conditions and especially the progress of the thyroid enlargement. When the latter has clearly preceded other symptoms and when no underlying affection is recognized, the diagnosis of ordinary Graves' disease would be indicated; whereas, in cases of very moderate symptoms occurring in individuals who had previously suffered from circulatory disturbances, anemia, or nervous conditions, one would think rather of hyperthyroidism as a secondary and perhaps a transient result. It is of importance to make this distinction as before outlined for the reason that prognosis and treatment must vary accordingly.

It is, moreover, important to recognize that many transient or trivial enlargements of the gland occur in anemic and nervous persons in whom no evidence of hyperthyroidism exists. These cases are not to be classified as Graves' disease.

TREATMENT.

There is prevalent a wholly erroneous impression that Graves' disease is a practically incurable malady. The reason for this view lies in the fact that the profession has generally recognized as Graves' disease only those more severe cases of the chronic type in which all of the classical symptoms are marked and the disease of the thyroid gland is a more or less fixed organic change. It is such cases as these that are presented in clinical demonstrations as type cases while the more frequent milder forms are often overlooked and only rarely sent to hospitals. On this account as well as because the patients frequently pass out of observation it is difficult to estimate the outcome of the disease. Ord and Mackenzie have analyzed (Allbutt's System. Vol. IV. p. 501) thirty-three cases of their own in which the disease lasted five years or ended fatally, and twenty-four cases of Dr. R. T. Williamson's similarly tabulated. Of the fifty-seven patients, fourteen died, ten recovered completely, eleven recovered almost completely, thirteen improved considerably, four improved slightly, four remained *in statu quo,* and one was alive but condition unknown. The same authors quote Buchan's statistics in which there are recorded only 105 deaths among 900 cases and state that in their opinion the mortality of well marked cases will be found near twenty-five per cent. "In about fifty per cent. more or less complete recovery will eventually take place." In addition to these figures the statistics of Dusch (12.5 per cent. mortality), of von Graefe (10 per cent.) and Charcot (25 per cent.) may be recalled; and the opinions of various clinicians of large experience like Dana could be quoted to show that a considerable proportion (perhaps one half) of the cases recover or reach a stationary and comfortable condition. Possibly those authors who are more skeptical have excluded milder cases that have not presented the complete syndrome in a typical fashion. My own experience agrees entirely with that of the authors who report a rather high percentage of recovery or marked improvement.

In considering the value of medical treatment one may profitably remember a statement of Möbius who says: "One often gets the impression that almost any sort of treatment is helpful so long as it is not positively harmful. Whether this is due to the rest and care that attend any regulated treatment or is attributable to the influence of suggestion or to the fact that various kinds of treatment are really beneficial can not be positively answered." Undoubtedly the general care of the patient when any sort of treatment is systematically conducted plays a part in the improvement of the patient and it is well to keep this thought in mind while we are discussing the results of various medicinal or other measures of treatment.

General Treatment. It is impossible to sketch the different kinds of general treatment that may prove useful. Much depends upon the nature of the case, the surroundings, and other conditions. As a rule rest is essential and anxieties must be overcome if possible. Change of air and scene may give a powerful impetus to recovery. The diet must be so regulated that the digestive functions are well performed and the occasional use of calomel or mild laxatives in those cases in which diarrhea is not present may be advantageous. There is little evidence in favor of systematic attempts at rectifying a supposed intestinal autointoxication. Hydropathic treatment may be helpful and in severe cases cold applications over the thyroid gland and heart are positively useful. General tonics of various sorts have a place of importance.

Treatment of Anemia. Arsenic and iron are indispensable remedies in the treatment of the class of cases I have referred to as occurring in anemic or chlorotic patients. In several very striking instances I have seen a complete cure follow a persistent use of these remedies. In milder cases such a result is almost certain. The possible usefulness of arsenic in ordinary Graves' disease independent of anemia will be spoken of under another heading.

Treatment of the Vascular Conditions. The general circulatory derangements often demand treatment on their own account, and it is probable that remedies which regulate the circulation may be useful by correcting local (thyroidal) congestion. Digitalis, strophanthus, and convallaria in moderate and sometimes increasing doses often appear to influence the whole disease in a favorable way. More frequently they are palliative only. Disappointment, however, awaits the physician who believes that these drugs will always or even regularly control the circulation in severe cases and it is a mistake to force large doses of these remedies too quickly. Various drugs that influence vasomotor conditions sometimes seem useful. The beneficial effect of these may be due to their controlling influence on the general vasomotor relaxation or to their local effect on the dilated vessels of the thyroid gland. Ergot, adrenal extracts and adrenalin have been used but it seems doubtful if any of these has decided merit. Quinin freely administered has been considered a useful remedy and its effect has been explained as due to an influence exercised on the vasomotor mechanism. Belladonna and atropin have an ancient reputation and appear to deserve it more than most of the drugs advised. Whether their usefulness lies in their influence on the nervous system, on the vascular apparatus or on secretion in the gland can not be answered. I have no hesitation, however, in stating that belladonna and its alkaloid freely administered are useful in even the severer forms of Graves' disease.

The local application of Galvanic and Faradic currents of electricity has been advised by some and condemned by others as useless. If actually operative it is probable that the good effects are due to an effect on the vascularity of the gland. One electrode may be placed over the gland or the sympathetic of the neck, the other over the back of the neck; weak currents should be used. The duration of the treatments may vary from ten or fifteen minutes up to several hours a day. A large flat electrode at the front and back of the neck add to the convenience of the treatment. My recent experience with this method has removed some of the skepticism I formerly had regarding its efficacy.

Treatment to Modify Thyroid Secretions. Arsenic and phosphorus in the form of various phosphates seem to have a modifying influence on the secretion of the thyroid and may be useful in other ways. Macaggi found that these drugs in poisonous doses cause a discharge of the colloid substance of the gland into the lymphatics and a modification of the colloid as well. Kocher noted that in thyroidectomized goats, in which a part of the gland was left, phosphorus causes rapid cachexia which he attributes to a supposed influence of the drug in promoting atrophy of the remaining gland tissue. Whatever of truth there may be in these experimental results, various clinicians have reported decided benefit from the administration of the two drugs under consideration. The favorite method of giving phosphorus is to administer sodium phosphate in doses of fifteen to twenty grains three times daily or various glycophosphates in corresponding amounts. Victor Mathes and M. Allen Starr among others have reported satisfactory results from this treatment.

Treatment of Nervous Conditions. In cases of Graves' disease apparently due to nervous causes and in those in which nervous symptoms become prominent such remedies as bromids, opium, and milder sedatives may be useful. Undoubtedly some cases are fundamentally benefited by the drugs. In most cases, however, sedatives are merely palliative in effect.

Contraindicated Remedies. Thyroid extract and iodin are sometimes used in the treatment of Graves' disease but are unadvisable and often positively harmful. The former almost invariably adds to the patient's discomfort and increases the symptoms, an evidence of the harmfulness of the drug and at the same time of the nature of the disease, that is, hyperthyroidism. Some cases have been reported in which thyroid extract was administered without harm and even with apparent benefit. It is difficult to explain these, but it is probable that the extracts which produce little harmful effect are those containing comparatively small quantities of thyroidin.

Iodin itself has more generally been used in simple goiters. If there is a tendency to hyperthyroidism in an otherwise simple goiter, iodin may hasten this, for the toxic principle of the thyroid secretion is probably an iodin compound associated with or contained in the thyroglobulin. In Graves' disease iodin is never advisable.

Specific Treatment. The directions in which a specific treatment may be sought are apparent when we consider the known facts regarding the pathology of the disease. If the phenomena be truly those of hyperthyroidism or a toxemia due to excessive secretion, we may hopefully search for methods to produce antitoxic substances or sera on the one hand, or methods to reduce the gland or its excessive secretion on the other. These methods may be classified as antitoxic and cytolytic.

Antitoxic Treatment. Ballet and Enriquez in 1894 first suggested the use of the serum of thyroidectomized dogs. If such a serum were found to have a definite influence the most reasonable explanation would be that the serum contains antibodies capable of somehow neutralizing the effect of thyroid poisons, such antibodies being present in excess on account of the ablation of the gland and the consequent accumulation of unused neutralizing substances.

Lanz in 1895 recommended the milk of thyroidectomized goats, claiming that this contains the antibodies of the blood. The possibility of thus obtaining a useful preparation in a palatable form for administration by the mouth seemed attractive.

Later Burghart made a few studies of the effect of injection of the serum of a myxedematous patient and then in conjunction with Blumenthal suggested a method of obtaining the active antibodies in solid form by precipitating the milk or serum of thyroidectomized animals with alcohol. The substance so prepared has been called rodagen which is manufactured commercially and is therefore generally available. One half liter of milk furnishes one hundred and twenty-five grains of rodagen and the dose ordinarily prescribed is from five to ten grains daily.

Möbius used the serum of thyroidectomized sheep, adding as a preservative 0.5 per cent. carbolic acid. He first administered it by injection. Later results showed that administration by the mouth is preferable. The antithyroidin of Möbius is also obtainable commercially. The dose should be from 0.5 to 5.0 c.c., beginning with the smaller amounts and increasing gradually. It is acceptably administered in wine. Similar preparations under the name of thyroidectin or other suggestive names have been made by various pharmaceutical manufacturers.

Christens prepared tablets of the dried blood of thyroidectomized animals (goats) as a convenient form for solution and administration by the mouth.

I do not think that it is advisable at this time to attempt a review of the reported cases in which the different methods above referred to have been employed, in the hope of establishing the usefulness of these plans of treatment. A great deal more experience will be necessary before any accurate estimate can be made, and it is especially desirable that authors in reporting cases should classify them according to their character. Conditions here are analogous to those which apply to diabetes and glycosuria. Statements of the effects of treatment based indiscriminately upon the management of cases of simple glycosuria of elderly or fat patients and cases of genuine diabetes would be utterly misleading if considered applicable to genuine diabetes alone.

Cytolytic Treatment. It has been known that injections of extracts or emulsions of the substance of various organs into animals will in some cases occasion the presence of substances in the blood-serum of the experimental animal, rendering that serum destructive to the organ used in the experiment. Thus nephrotoxic, hepatotoxic, epitheliotoxic sera have been produced. The results of these experiments will require careful scrutiny before they can be absolutely accepted but enough has been done to show that it is possible to produce more or less specific cytolytic sera by such injections of animal tissue. The same effect presumably might be caused by implantation of tissue of one animal into some part of the body of another. This method, however, has not been often attempted and its efficiency can not be so definitely asserted.

In 1902 Mankovsky transplanted thyroid glands of dogs into the peritoneal cavity of cats and claimed that as a result in three instances the serum of the cat became distinctly thyrocytolytic. In the same year, Gontcharukov injected emulsions of dogs' thyroids into sheep and claimed that the serum of the latter was rendered thyrotoxic. In 1904 Portis instituted a similar series of experiments injecting dogs' thyroids into the peritoneal cavity of goats. His results were partially successful. Subsequently MacCallum and Yates, working with dogs and geese, obtained practically negative results.

Murray (1904) first experimented with rabbits, injecting these with the official liquor thyroidei; later he used sheep and goats in a similar manner. His results were highly suggestive of the development of a thyrotoxic serum.

The most extensive researches in this direction are those of Rogers and Beebe of New York. These authors employed thyroid glands obtained from cases of Graves' disease by surgical operation and prepared their sera by injection of the isolated nucleoproteid and the thyroglobulin of the glands respectively. Subsequently on account of the lack of sufficient material they also experimented with thyroid glands obtained from normal human subjects at autopsy. It is unnecessary in this place to enter upon a full discussion of the merits of the experimental work performed by these authors or to comment on the possible errors of their method. Whatever merit there is in the serum elaborated by these investigators there can be no doubt that much refinement of technic will be necessary before the treatment can be considered finally established. The authors claim that the serum of the experimental animal contains two separate types of substances,—one, antitoxic and the result of the injection of the thyroglobulin, which is probably the toxin of the thyroid secretion; the other, cytolytic and the result of injection of the nucleoproteid of the gland. That their serum actually contains a cytolytic substance has been demonstrated *in vitro* but the antitoxic quality is more or less theoretic. The serum of Rogers and Beebe has been used in a total of ninety cases of which twenty-three have been cured of all symptoms, fifty-two have been more or less improved, eleven have failed to improve, and four died. It would be premature to attach too much significance to these figures but there are some facts that seem significant in the results obtained. One of these that seems particularly important is the delay in the beneficial results obtained from the injections. This seems to speak in favor of the cytolytic activity of the serum, for were its effects wholly antitoxic, the results would necessarily be prompt and in proportion to the neutralization of toxins present. On the other hand if the results were achieved by destruction of thyroid tissue and consequent diminution in thyroid secretion, there would naturally be such a delay as that which has been clinically observed. The diminution in the size of the gland noted after this treatment is another fact of significance pointing in the same direction, that is, to cytolysis.

X-Rays. A number of clinicians have employed the *x*-rays in cases of simple and exophthalmic goiter, and the results seem to justify a further employment of this method of treatment. Mayo, having observed considerable sclerosis in the tissues of the neck in cases of glandular enlargement in which he operated subsequent to *x*-ray treatment, was impressed with the possibility of causing a sclerotic atrophy of the thyroid gland in cases of Graves' disease and instituted this treatment in ten cases. As a result a practical cure was achieved in two of the patients. Among others who have reported cases are Beck, who has used the *x*-ray in three cases after operation, Stegmann, who treated two cases with encouraging results, and Pfahler and Thrush, who treated one with distinct improvement, manifest after four weeks. The experience with this treatment is as yet too meager to justify any conclusion, but a knowledge of the action of *x*-rays on other tissues would indicate that its probable effect in Graves' diseases is to cause an atrophy of the glandular tissue and thus to reduce the tendency to hyperthyroidism. If this result could be regularly achieved without destructive effects on other tissues, the *x*-ray treatment would commend itself as highly desirable.

CONCLUSIONS.

A few general conclusions will serve to summarize what I have detailed. (1) The syndrome of hyperthyroidism which is met with in most characteristic form in typical cases of Graves' disease also attends mild and often transient enlargements or other pathological lesions of the thyroid gland. While distinguishable from ordinary Graves' disease by accurate diagnosis and while as a rule entirely different in their clinical course and prognosis, these cases must be included with Graves' disease under the more general heading of hyperthyroidism because in any case a gradual transition and a termination in a severe form is possible. (2) Hyperthyroidism is due to increased and perhaps perverted secretion of the gland and is therefore promoted by increased vascularity of the gland and hypertrophy of its secretory structure. Methods of treatment designed to reduce vascularity or to limit secretion functionally or by actual destruction of glandular substance should be investigated hopefully. (3) General medical treatment including change of scene, rest, diet, and tonics often benefit milder cases and may mitigate symptoms even in the severer forms. Iron and arsenic; digitalis, strophanthus, and convallaria; atropin, ergot, and mild currents of Faradic or Galvanic electricity, are useful respectively in improving the blood, the general and the local circulation.

(4) Iodin is a dangerous drug and thyroid extract should not be employed. In some cases seemingly good results from the use of thyroid extracts, have been reported. The explanation of this is difficult.

(5) Three forms of specific treatment have been suggested: (*a*) By the production of antitoxic substances; (*b*) by the preparation of cytolytic substances; and (*c*) by the use of *x*-rays. The statistical evidence in favor of the antitoxic sera such as the antithyroidin of Möbius, the milk of thyroidectomized goats and the like, is very encouraging but can not yet be fully accepted. The results obtained with the cytolytic serum of Rogers and Beebe are equally or even more encouraging and the treatment seems

to rest upon a scientific basis. The methods of preparing the serum, however, require refinement and elimination of certain defects. The *x*-ray treatment has not been sufficiently used to justify a final expression of opinion as to its merits.

THE RELATION BETWEEN THE THYROID AND THE EYE.

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(Read by invitation at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In writing of the influence of the thyroid on the eye we must of necessity include the parathyroid, as the thyroid and parathyroid are so intimately associated anatomically that pathological changes in the one may be accompanied by pathological changes in the other.

The relation of the thyroid to the eye may be studied under the following headings:

1. Conditions of the eye due to pressure of thyroid enlargements.
2. Conditions of the eye due to local metastases of malignant thyroid tumors (very rare).
3. Conditions of the eye due to or associated with absence of thyroid gland.
4. Conditions of the eye due to compensatory enlargement of the hypophysis cerebri.
5. Conditions of the eye aggravated by or otherwise associated with goiter,—Graves' disease, etc.
6. Conditions of the eye due to some form of hyperthyreosis.

1. *Pressure of Thyroid Enlargements.* It can readily be conceived that pressure on the common carotid artery and the internal jugular vein may so influence the circulation of the eye that venous stasis and edema of the retina may result, in part from a diminution in arterial flow, in part from interference with the return of blood to the heart. The venous stasis, however, could not reach a high degree because of collateral circulation. The disturbance of the nutrition might bring about anesthesia of the retina and narrowing of the visual field. Hemorrhage into the retina, vitreous or choroid might readily develop under these conditions.

Michel (*Festschrift z. Ehren Prof. Horner, S. i,* 1881) refers to a case of cataract which he thinks was due to atheroma of the carotid brought about by pressure of the thyroid together with the struma of goiter.

Manhoeffer (*Encyklöpadie d. Augenheilk., Leipsig, Lief XI.* p. 467) refers to compression of the cervical sympathetic which would produce the symptoms peculiar to paralysis of the sympathetic. namely, ptosis, enophthalmus, contraction of the pupil, reduction of intraocular pressure, and unilateral sweating. Such a case is recorded by J. Herbert Fisher (Ophthalmological Anatomy, London, 1904, p. 152): Female, aged forty-two; goiter becoming reduced by internal medication. The left lobe was much larger than the right. All of the symptoms of paralysis of the sympathetic on this side (namely, ptosis, enophthalmos, suffusion of the eye, myosis, failure to react to cocain instillations, perspiration on the right half of the face) were present.

2. *Local Metastases of Malignant Thyroid Tumors.* Groenouw (*Graefe-Saemisch, 2 Anfl., Bd. XI. T. i,* p. 333) states that tumors of the thyroid can cause disease of the eyes, and refers to a case reported by Elschnig: Male, aged forty-seven, who had carcinoma of the thyroid. The tumor had extended into the jugular vein and caused metastasis in the left cavernous sinus. This growth had involved the ocular nerves with the exception of the optic nerve. Clinically there was complete ophthalmoplegia externa and interna affecting the left eye, ptosis, and anesthesia of the globe, with re-

tention of perfect vision and normal ophthalmoscopic appearances.

3. *Absence or Loss of Function of the Thyroid Gland.* It is now generally admitted that the exciting cause in primary myxedema is loss of the function of the thyroid gland either by congenital absence, by removal by surgical means, or by disease of the gland, and, since the report of the work of the special committee appointed by the Clinical Society of London to investigate the subject (Trans. Clin. Soc., London, 1888, Supplement), it is conceded that "(1) myxedema and cachexia strumipriva are identical; (2) sporadic cretinism is myxedema occurring in childhood; (3) endemic cretinism is closely allied to myxedema." It is therefore plain that the relation of the eye to the thyroid in this connection is the condition of the eye in myxedema. The departure from the normal in the conditions of the eyes is due largely to the edematous condition of the tissues, the effect on the hair follicles, and the dryness of the skin.

"The upper and lower eyelids are swollen and the skin wrinkled, the supraorbital fossa being often filled by the myxedematous swelling, while the skin just below the lower lid is baggy and translucent from the swelling beneath it. As a result of the swelling there is frequently some dropping of the upper eyelid with narrowing of the palpebral fissure, which is partly compensated for by an instinctive elevation of the eyebrows by tonic contraction of the occipito-frontalis muscle. This contraction causes a transverse wrinkling of the skin of the forehead. In advanced cases the skin of the lids is dry and the hair of the eyebrows and the cilia may be partially or wholly lost. One of the most prominent symptoms is lachrymation due to the swelling of the eyelids" (Murray, Diseases of the Thyroid Gland, London, 1900).

Callan (Trans. Amer. Ophth. Soc., 1895, p. 391) mentions an appreciable anesthesia of the corneæ which was present in four cases observed by him.

Murray states that "sight is impaired in about half of the cases, but in many this impairment is due to causes unconnected with myxedema. The committee of the Clinical Society determined that in a small proportion of cases a general diminution in acuteness of vision and watering of the eyes were to be attributed to the disease. In some cases limitation of the field of vision has been observed, and in a few atrophy of the optic nerve and edema of the retina."

Cataract occurred in one of Callan's cases and Landsberg (*Centralbl. f. prakt. Augenheilk.*, 1888, S. 39) reports a case of cataract developing in connection with choroiditis which occurred two years after the total extirpation of the thyroid.

Wagner (*Graefe-Saemisch*, Vol. XI. Part I. p. 331, Second Edition) reports a case of neuroretinitis of both eyes occurring in a girl of twenty-six years with myxedema. Under the influence of thyroidin the vision of the right eye improved from $^{20}/_{200}$ to $^{20}/_{20}$; the left eye, in which the optic nerve was atrophied, showed no improvement. On account of the improvement of the right eye under thyroidin, Wagner thinks that it is not unlikely that the neuroretinitis was due to the myxedema.

4. *Compensatory Enlargement of the Hypophysis Cerebri—Disturbances Accompanying Myxedema of Intracranial Origin.* This group includes the disturbances due (*a*) to the edema of brain tissue and (*b*) the effects on the optic nerve due to compensatory enlargement of the hypophysis cerebri. To the first may be attributed the visual hallucinations reported by some observers. These could be brought about by disturbances of the neurons of the cortical memory centers for visual impressions, by pressure or by edema.

Bitemporal hemianopsia and atrophy of the optic nerve which have been reported in myxedema, are presumably due to changes in the hypophysis cerebri. According to Murray, the hypophysis has been found to be enlarged even to double the normal size in some cases. The enlargement is apparently due to vicarious activity of the hypophysis in the attempt to compensate for loss of thyroid secretion. Boyce and Beadles (Murray), in a case recorded by them, found that the increase in size was due to hypertrophy of the anterior glandular portion. The following cases are illustrative: Sanesi (*Clin. med. Ital.*, p. 223, 1889) reports a case of myxedema accompanied by severe headache and bitemporal hemianopsia. There was atrophy of the thyroid gland. He attributes the affection of the eyes to compensatory hypertrophy of the hypophysis. Uhthoff (*Berliner klin. Woch.*, No. 22, 1897) reports a peculiar case which may be placed in this category. An emaciated, under-sized girl of fifteen years, with atrophy of the thyroid and dryness of the skin, but without myxedema or cretinism, presented a condition of bitemporal hemianopsia, developing atrophy of the optic nerves and hemianopic pupillary reaction. Uhthoff attributes the condition to a vicarious hypertrophy of the hypophysis cerebri caused by atrophy of the thyroid gland. He refers to the observations of Rogowitsch, Streda and Hofmeister in support of his contention; also to the work of Coulon (*Virchow's Arch., Bd. 147, H. i,* 1897), who examined the hypophysis cerebri in six cases and found great enlargement in three. The relation between the thyroid gland and the hypophysis cerebri is very conclusively shown by the researches of Von A. Shoeneman (*Hypophysis und Thyroidea, Virchow's Arch., Bd. 129, H.* 2, 1892). In twenty-seven cases with normal hypophyses the thyroid was normal. In eighty-four cases with pathological changes in the hypophyses, disease of the thyroid was found without exception.

Especial Features of Cretinism. The eyes are small, deeply placed and widely separated. The palpebral fissure is narrow and at times oblique. Schloz (*Klin. u. Anatom. Untersuch. u. d. Cretinismus,* Berlin, 1906, p. 118) states that of the special senses the power of sight is the best developed. Slight congenital anomalies were found in the eyes of five out of fifty-seven cretins examined by Hitschmann. Scholz found 10.4 per cent. of strabismus and 15.1 per cent. of nystagmus in one hundred and six cretins examined by him. Pupils and fundi oculi normal. In advanced cretinism the hair of the eyebrows is frequently scanty and is sometimes wanting.

The anemia accompanying myxedema (red blood-corpuscles, three to four million; hemoglobin, sixty to seventy per cent.), present in so high a degree, and the hemophilia so frequently observed, favor hemorrhage and exudation into the retina, vitreous and choroid.

Results of Taking Thyroid Preparations. While great benefit is obtained by the guarded use of thyroid preparations taken internally or hypodermatically, their overuse occasions disturbances in which the eye participates. Coppez (*Arch. d'Ophth.*, 1900, p. 656) refers to a dog to which thyroid tablets were given. The dog became emaciated and at the same time almost blind. On stopping the use of the tablets the vision improved to a considerable degree. Coppez reports the observations of five patients between the ages of thirty and forty years who had taken thyroidin for many months for the reduction of fat. They became very nervous and developed symptoms of retrobulbar neuritis with central scotoma. The condition increased rapidly after it began, so that in from six to eight weeks the vision sank to $^1/_{10}$. On discontinuing the thyroidin the vision slowly improved, but full recovery occurred only after many months.

The excessive administration of thyroid products may give rise to the syndromes of exophthalmic goiter. According to Lagrange and Valude (*Encyclopedie Française d'Ophth.*, Paris, 1905, p. 123) it is noted at times in the course of the treatment of myxedema with thyroid extracts. When the myxedema disappears, symptoms of Graves' disease may set in.

5. *Conditions Aggravated by or Otherwise Associated with Goiter; Exophthalmic Goiter, Graves' Disease.* The cause of Graves' disease is still in dispute. However, whatever its origin, it is conceded that anomalies of the thyroid gland accompany the greater number, if not all, of the cases, enlargement of the thyroid being frequently, but not always, present. Ocular symptoms develop early and are of much importance in this disease. However, as this is such a trite subject I shall not present it here in an exhaustive manner.

The eye symptoms which accompany Graves' disease may be considered under the following headings: (1) Exophthalmos, (2) Graefe's sign, (3) Dalrymple's sign, (4) Stellwag's sign, (5) Gifford's sign, (6) Rosenbach's sign, (7) epiphora, (8) tache cerebrale, (9) pigmentation of the skin of lids, (10) overhanging fold of skin of upper lid, (11) protrusion of skin at lower margin of orbits, (12) periodic edema of eyelids, (13) disappearnce of eyebrows and eyelashes, (14) cornea, (15) iris, (16) fundus oculi, (17) affections of ocular muscles.

1. *Exophthalmos.* This familiar symptom may be present in varying degree, from an almost imperceptible increase in the prominence of the eyes to a condition rendering it impossible to close the lids over the globe. In rare cases the eyeballs are forced outside of the lids, a condition resembling paraphimosis resulting. The globe may be readily pressed back into the orbit, but the exophthalmos recurs as soon as the pressure is removed.

The exophthalmos is usually bilateral, but may be unilateral. The symptom may appear only under special circumstances. De Mussy reports a case in which the exophthalmos was present only during choreic attacks, and Savage reports a case which presented the condition only at the time o menstruation.

It is generally conceded that the exophthalmos is due to hyperplasia of the fatty tissue of the orbit and to dilatation of the vessels of the orbit.

2. *Graefe's Sign.* This (*Deutsche Klinik*, 1864, No. 16, p. 158) consists in a failure of the upper lid to follow the eyeball when the patient looks downward, thereby exposing an unusual area of the sclera above and to the sides of the cornea. If the eye is rotated upward, the upper lid follows the globe more energetically and to a greater degree than normal. The sign is not always present in Graves' disease. Different writers report differently regarding it. It occurred in 98 per cent. of the cases observed by Sharkey (*Brit. Med. Jour.*, Oct. 25, 1890); in 55.5 per cent. of the cases observed by Lewin (*Wilbrand u. Sanger*, Vol. I. p. 44); in 13.3 per cent. of the cases observed by Hill Griffith; in 17.6 per cent. of the cases observed by West. While in the great majority of the cases the sign is bilateral, it has been observed in but one eye in some cases. Graefe's sign is not pathognomonic of Graves' disease. It may occur in individuals apparently in good health, as mentioned by Posey (Posey and Spiller, The Eye and Nervous System, p. 833). The writer has observed it from time to time. In cases of simple chronic glaucoma it is not infrequent. "Kocher and Jessup have shown that similar phenomena, but to a less degree, may be produced by instilling cocain into the conjunctiva," the condition being attributed to stimulation of the nerve endings of the sympathetic and consequent contraction of the muscular fibers supplied by them.

The Graefe sign appears independently of the degree of exophthalmos. It may disappear at any stage of the disease and may reappear. The lower lid may present a similar condition, but to a less degree.

A number of theories have been advanced to explain this sign, for the consideration of which I beg to refer you to Wilbrand and Sanger (*Neurol. des Auges,* Vol. I. p. 44). Von Graefe was of the opinion that the phenomenon is due to contraction of the nonstriated muscle fibers of the muscle of Müller as a result of irritation of the sympathetic.

3. *Dalrymple's Sign.* This is the term applied to the condition which obtains when the lids are too widely separated and a staring expression is induced. This sign may or may not coexist with the Graefe sign. It is usually bilateral. It is not pathognomonic of Graves' disease, being not infrequently observed in health. The phenomenon is due to retraction of the lids by contraction of the nonstriated muscle fibers of the lids and orbit consequent on stimulation of the sympathetic.

4. *Stellwag's Sign.* Ordinarily the Dalrymple sign is credited to Stellwag, but, in a strict sense, the Stellwag sign is the infrequency and the incompleteness of nictitation. This sign may coexist with exophthalmos and with the Graefe sign, or both may be absent. The sign is not pathognomonic, but, taken in connection with other signs of Graves' disease, is of much value in assisting in making a diagnosis.

5. *Gifford's Sign.* In an article read before the Section on Ophthalmology, New York Academy of Medicine, 1906, by Dr. Harold Gifford, the author reported having observed as an early sign in Graves' disease in many of the cases, an inability or great difficulty to evert the upper lid on account of retraction and rigidity of the lid. The sign was not always present. When it did occur it appeared early and disappeared in from three to six weeks. The observations of Gifford were confirmed by Dr. Charles Stedman Bull in the discussion of the paper.

6. *Rosenbach's Sign.* This consists in trembling of the upper lid when the patient closes the eyes gently as though in sleep. The trembling disappears when the eye is again opened and is not present when the patient actually sleeps. The symptom is frequently, but not always, present in Graves' disease. It has been observed in other diseases and in health.

7. *Epiphora.* This is regarded by Berger (Posey and Spiller) as an initial symptom of Graves' disease, attributing it to the known influence of the sympathetic on the secretion of tears. Irritation of the sympathetic increases the flow. Undue exposure of the globe to the air may also be a factor in the production of an excessive flow of tears when the Graefe and Dalrymple signs coexist. Profuse lachrymation is usually bilateral, but may be unilateral. Wilbrand narrates a case in which the epiphora was confined to one eye and was nocturnal, the flow being sufficiently profuse to awaken the patient. Exophthalmos, the Graefe and the Stellwag signs were present. As the disease progresses the lachrymation grows less and may become quite scanty.

8. *Tache Cerebrale.* A sign of vasomotor irritability is the "tache cerebrale." This is not infrequently demonstrable in Graves' disease (Trousseau). By drawing the finger over the skin of the lid a transient flushing will follow.

9. *Pigmentation.* Pigmentation of the skin of the lids has been observed by many clinicians in connection with Graves' disease. It is not a constant symptom. The skin of the upper lid is the site of the pigmentation. The color is light brown, resembling that of Addison's disease. An abnormal dryness of the skin is sometimes observed.

10. *Overhanging Fold of Skin.* When the Graefe or the Dalrymple sign is persistent, a fold of the loose skin of the upper

lid not infrequently falls over the retracted margin of the lid and in exceptional cases may reach the eyeball.

11. *Protrusion of Skin of the Lower Lid.* The excess of orbital contents which causes the exophthalmos, produces, in favorable cases (namely, those in which the septum orbitale of the lower lid is somewhat relaxed), a rounded, sac-like prominence of the lid at the lower margin of the orbit by the pressure against these structures.

12. *Periodic Edema.* Transient edema of the lids is sometimes present.

13. *Disappearance of Eyebrows and Eyelashes.* The hair of the eyebrows and the eyelashes is sometimes lost. The loss is usually bilateral, but unilateral loss has been reported.

14. *Cornea.* As a result of the exposure consequent on extreme exophthalmos, infrequency of winking, and scanty lachrymation, ulcer of the cornea sometimes occurs. The writer has observed almost complete loss of corneal tissue in both eyes from this cause. Slight impairment of sensibility is not uncommon.

15. *Iris.* Moderate dilatation of the pupil is frequently observed; also inequality of the pupils. These symptoms are due to irritation of the sympathetic. In cases of inequality of the pupils the irritation is of varying degree on the two sides.

16. *Fundus Oculi.* According to Knies (The Eye in General Disease, Noyes, p. 443), in advanced cases the ophthalmoscope often shows arterial pulsation extending far into the periphery of the fundus. Becker (*Monatsblt. f. Augenheilk.*, 1880, p. 1) found arterial pulsation in six of seven cases examined. The phenomenon is due to the fact that the blood pressure falls notably during diastole and becomes much less than the intraocular tension. The weak support to the blood column permits the blood to recede from the arteries; it is forced in again in systole. Venous congestion is often observed in advanced cases.

17. *Affections of the Ocular Muscles.* Palsy of the extrinsic eye muscles is not very uncommon in Graves' disease. Bilateral abducens paralysis is most frequently seen, but isolated and multiple pareses and paralyses have been described by various writers. The paralyses occur late in the disease as a rule, but may occur relatively early. They may be transient, but in the greater number of cases are persistent. It is a significant fact that the intrinsic ocular muscles and the optic nerve are seldom affected. Not infrequently a single muscle of those supplied by the third nerve is involved. Almost complete paralysis of the extrinsic muscles of the eye has been reported. These various manifestations of paralysis of ocular muscles point to peripheral lesions in some cases, to nuclear lesions in others.

DISCUSSION.

ON PAPERS OF DRS. MULLER, ELTERICH, LECONTE, STENGEL, AND WEEKS.

Dr. Edward Martin, Philadelphia: The subject has been covered so completely and in such a scholarly manner that little remains to be said, except for the individual to express his views in regard to treatment. Dr. Stengel has given a disquisition almost like a novel concerning the development, progress, and therapeutic struggles to find a remedy for Graves' disease. He ended by stating that after these various remedies had been tried and found wanting, he would send his patient to the surgeon; but I think that the main question is how long the trial should persist. Medical men have long told us that Graves' disease is an expression of a deep underlying lesion, not yet reached by laboratory research. It has been shown that many, if not all, of the symptoms of Graves' disease can be produced by injury to the restiform body; and that, after injury to the restiform body and the production of symptoms of Graves' disease, the removal of the thyroid body will cure the symptoms. If this body is removed from an animal before injury the symptoms will not develop. If the thyroid can be properly removed, the symptoms of Graves' disease will disappear.

The large mortality is due to the fact that the cases are referred too late to the surgeon,—when goiter-heart has developed, and the patients are not fitted to withstand any formidable operation. Secondly, we have not yet assured ourselves of exactly the proper quantity of thyroid substance to leave. If too much is left, the symptoms will not be cured; if too little, worse symptoms will develop.

Removal of simple goiter is becoming one of the safest, simplest, and easiest of operations. If we wait for the symptoms of malignant degeneration to appear, we will have waited beyond the time for surgery to be of service. If we wait for the *x*-rays, we will have so complicated a simple operation as to make the outlook very discouraging. If, when we see that a gland is getting larger, we are prepared to operate, and the procedure is undertaken early enough, our operative mortality will be almost as low as in appendicitis or operations on the stomach.

Dr. Risley, Philadelphia: Dr. Weeks has already spoken so fully of Graves' disease from the standpoint of the ophthalmologist that but little is left for me to say. In listening to the brilliant papers which have been presented and to the brilliant discussion which they have elicited I have been profoundly impressed with the fact that we have seen one of the most striking illustrations of the unending and untiring struggle of scientific medicine to advance along a hidden way to a knowledge of the hitherto unknown.

It has been my lot, I had almost said unfortunately, because of the ocular symptoms of Graves' disease, to have seen a relatively large number of cases. I was glad to hear Dr. Stengel say that by no means do all cases of this obscure disease array themselves in the same group. I have long been impressed by the suspicion that possibly no two cases are alike. There are certainly many points of divergence; but, with some approximation to the truth, the patients I have seen can be placed in two groups. One of these groups of cases has, in my hands, proved incurable with one exception. In the other, although presenting most of the classic symptoms (insomnia, tachycardia, exophthalmos, and enlarged thyroid), there has been an additional symptom, absent in the other class; namely, dermographism. I have seen this in three striking instances. While all the other symptoms were common to the ordinary picture of Graves' disease, these presented the vasomotor ataxia. In each of these patients Stellwag's symptom was also unusually pronounced. One patient was a girl of seventeen years, apparently in good health, and well nourished. On removing her hat in the office, I saw the characteristic welt of dermographism on her brow, where the skin had been pressed by the hat rim. She had Stellwag's symptom well marked. Exophthalmos was also well marked, but the proptosis was not so great as is often seen. She recovered under treatment with iron, nux vomica, and careful attention to the general regimen.

The other patient, a woman forty years of age, had a left-sided enlargement of the thyroid, the gland on the other side not being palpably enlarged. The exophthalmos was also left-sided, and was not well marked. The lid was strongly drawn back under the orbit (Stellwag's symptom). The administration of thyroid gland seemed to increase the symptoms, aggravating her insomnia, general nervousness, and tachycardia. Its administration was stopped, therefore, and under the iron, nux vomica, and bromids, she recovered.

The one case of recovery belonging to the first group, *i. e.* where both dermographism and Stellwag's symptom were absent, was in a typewriter in the office of a business man; a girl in perfect health, the daughter of an old soldier. I had treated her two years previously for ulcer of the cornea, so that I was in some measure familiar with her condition of health prior to the onset of the Graves' disease. Something about which she would not speak had occurred in the office. She came home pale, nervous and excited and in two weeks was brought to me with exophthalmos and enlargement of the thyroids. I asked Dr. Cohen, then associated with me at the hospital, to see her; and he suggested the use of thymus gland. This was tried, with ascending doses of nux vomica, and she recovered. She had had no return two years after treatment.

Dr. George C. Johnston, Pittsburg: The subject of goiter is a very broad one. There are many varieties of it, and the *x*-ray has no power of discrimination. It is to be employed only, if at all, in certain specific instances. It has a certain definite physiological action. Hypertrophic glandular tissue, if exposed to the *x*-ray for a certain length of time, will undergo certain changes. The epithelium will disappear, and there will remain only a fibrous structure. When a goiter is merely hypertrophic or exophthalmic, the application of the *x*-ray will cause diminution in size and disappearance of symptoms, and sometimes the latter without the former. Not one case out of twenty-five that come for treatment is at all suited for this method. Out of all that have been sent to me, I have submitted only six to radiation. These patients are satisfied with the result, but I am satisfied in but a single case. What the surgeon has said about the bad results of the *x*-ray is not applicable to cases in which a proper quantity and quality have been applied.

Dr. Le Conte, closing: I have one word to add. I mentioned excision of the thyroid gland alone, because I do not believe in any of the other operations (except, perhaps, ligation) that have been recommended as a preliminary measure to excision.

THE SECRETARY OF A COUNTY MEDICAL SOCIETY.

BY JOHN B. DONALDSON, M. D.,
Canonsburg.
Secretary of the Washington County Medical Society.

(Read at the Conference and Banquet of Councilors, District Censors, and Secretaries of County Societies at Bedford Springs, September 11, 1906.)

Show me your secretary, and I will tell you whether your society is a success or a drag. If he is prompt, active, and energetic, the society is bound to be a good one. I firmly believe the society is just what he sees fit to make it. Let me qualify this statement; I am speaking of the rural societies, not of the counties that contain large cities where they have a committee on program, etc. I do not want to appear egotistical, and hope you will pardon me for alluding so frequently to my own society, but I know what has been done there, and know the material to do it with.

This is an age of organization, and the profession has awakened to the necessity of doing something along these lines, but the average doctor is a mighty hard man to get interested in anything, especially in a scheme that he thinks will take his time. And, again, he feels that, if Dr. So-and-So is going to run the society, he "won't play." I often have men tell me, "Well, if Dr. Blank is a specimen of your society, I want none of it in mine." Such men are rapidly becoming extinct, thank the Lord, and in a few years they will all be dead or have joined the ranks of the irregulars, where they belong. They remind me of Sam. Jones' lecture in which he rips the hypocrites up the back in about this language. "You old Presbyterian brother, out there, that won't speak to your neighbor when you meet him on the road, why, the only reason you ain't in hell is because you ain't dead." And it is so. The chump doctor, who won't speak to his conferee, is rapidly becoming extinct. The young men are not trained along these lines. Why, you and I, old man, were taught to hate a homeopath like a snake. Our professors were men of these strong likes and dislikes, and did *us* much harm by teaching it. It takes a broad man almost a life time, to get such stuff out of his head.

At this first meeting of the secretaries of the component societies of the state, I would like to say something helpful if I could. I want to see this feature of the society kept up, and know it will be productive of much good. The secretary must be a diplomat, and a busy man. To him will almost all grievances come, and it is up to him to pour oil on the troubled waters. You can generally bank on the average kicker not being very familiar with the rules of his society, and he generally writes the secretary for instruction, or for a copy of the By-Laws, for he is sure to have mislaid his copy. Answer his letter promptly, but don't hurry up the By-Laws if his point is too well taken. A little time soothes a whole lot, and he won't be quite so mad next week.

As to answering letters, a secretary should *never* allow a letter to remain over night unanswered. It is simply damnable the way the average doctor treats his correspondence. He pays about as much attention to it as he does to his prayers. He will not answer at all if it is possible to get out of it. Every secretary here will bear me out in this, I know. But for a secretary to be careless in this respect is simply unpardonable, no matter how trivial the request may appear to you. Let your work be systematic in every respect. Your notices must always come out on time. They should be neat and attractive in appearance. *Don't* send out postal card notices. You don't use postal cards in your own correspondence, and why should your society? We use a sheet, that we have printed for us at the beginning of the fiscal year, with quite a lot of information on it as a sort of letter head. These are printed on one side only, in bulk, and are used for the programs each meeting, leaving a space for writing a few lines if needed. The difference in cost is trivial, and well worth the money. Neater designs will occur to many of you, but I think the idea a good one, and I have been flattered to have men from our own and other states thank me for the idea, which they had adopted. The practitioner is a busy man. His mind is not on society work, and you must keep him posted. You can do it in this way. Tell him every month when the state society and the American Medical Association meet and where. He won't mind it from one month to the next, but keep on telling him. Tell him who the officers are, how many members you have, when you were organized, and such other information as may occur to you that every medical man should know. Keep before him all the time how a man may become a member of the society and what he gains by so doing. By and by he will absorb these things and be proud to tell his folks.

For your secretary always pick a busy man. It is a mistake to say, Dr. Blank does not have much to do, and will make a good secretary. The busy fellow is the chap you want. He does not get weary half as soon as the idle fellow, who generally does not have time to answer his letters or pay his bills. Pick a young man if you can get him with the requirements, but don't turn him down if he happens to be fifty and busy.

Once a society gets a good secretary keep him at it until he begins to flag, then turn *him* down. Many a good society is kept in the mediocrity rank because they don't like to hurt the old secretary's feelings. It is a mistake! Fellow secretaries, as soon as you feel that you can't keep up the pace, resign! Keep up the interest in your meetings by having a strange speaker every time. The element of curiosity helps bring some. But don't neglect bringing out the young bashful talent of your own men. Make them and everybody else think the program depends largely on them. It is easy if you get them going once. Every society has men that will surprise you if by a little urging you get them interested. Don't have *too much* on your program. "Enough is as good as a feast," and, if your men go away tired, they don't carry home with them the feeling of satisfaction that you want. If your county is a large one it may be of advantage to have one or two meetings each year in some other town than the regular meeting place, but our experience is that it does not do much good. Men get in the habit of going to a certain place and will not be pleased elsewhere.

Have an attractive place to meet. We have furnished for us by the county, in the court house, a beautiful room, adorned with portraits of our ex-presidents and noted dead.

As to the number of meetings each year, that can not be arbitrarily arranged. We meet bimonthly now, having increased the meetings from three to six per year.

A secretary must of course never miss a meeting. Nothing short of real sickness in his family should justify his absence.

You run the risk, in taking the initiative in almost every movement that your society makes, of having the knockers say, "We have a little too much Donaldson (or whatever your name is) in our society." The only remedy for this is, like Davy Crocket, to "be sure you are right, then go ahead." The knocker you always have with you, and he often is productive of much good in helping to keep you in bounds. Make an ally of that chap as fast as you can. Make him *particeps criminis.* He is often a good fellow (in disguise). If I were making a scientific diagnosis of his case, as a rule I would say he is suffering from dementia paranoia, or more frequently dementia praecox.

Never allow your minutes to remain unwritten twenty-four hours after a meeting. I have known minutes of county medical societies to remain unwritten for over ten years. Imagine the consternation of that secretary when called to produce the minute book; for the knocker finally got up the courage to demand it of a superannuated secretary, who should have been retired after his tenth year. You say, "Why, you expect a secretary to be immaculate!" and "Such men are impossible!" Not at all. First of all, your heart must be in the work, or don't take it. If you accept the office, put into it your whole heart, mind, and energy, and success is bound to follow. Put into it the same kind of work and brains you do in your business. Don't flag at any one point; if you do, you will make a failure. It is a pleasure to feel that you are the instrument of doing much good for your fellow doctors. The greatest pleasure of my life is to be in the society of the doctors of my community and state. About all the vacations I ever get are at the meetings of this and kindred societies, where I renew old acquaintances and form new ones that are a joy to me. And why shouldn't I enjoy these? They are the best fellows on earth; all you have to do is know them.

A secretary should never miss a meeting of his state or the national society. If possible be one of the representatives in its executive body. You will learn much as to how to deal with men. Belong to all the medical societies you can get into; attend and take part in them.

There is much that might be said as to the duties of a secretary, but it would be impossible to cover the ground in a five minute paper. To sum up the requisites of a good secretary, let me say briefly, and in conclusion, as the preachers say, use your brains, and if you don't have many, work what you have to the limit, and you will get results.

Anything will do for a president of a society, but not so as to the secretary.

THE ADULTERATION OF DRUGS, AND OTHER SUBJECTS RELATING TO THE PROFESSION.

BY JACOB L. ZEIGLER, M. D.,*
Mount Joy.

(Read at the meeting of the Lancaster City and County Medical Society, June 6, 1906.)

This may be said to be an age of progress, of unrest, of intense seeking after notoriety, ambition, and wealth, without taking into consideration the means used in the attainment of the object, whether right or wrong, just or unjust, so that the end may be obtained. This may be pessimistic, but is it not frequently brought before us by the unmasking of the frauds involving men who stand high in the estimation of the public, who are intrusted with financial and municipal interests of the greatest importance, and who were believed to be pure and honest, above suspicion of malfeasance?

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*Dr. Zeigler was eighty-four years old November 17, graduated from Jefferson Medical College in 1844, and has since been in continuous practice in Mt. Joy.

The cry against dishonesty and adulteration is looked upon as a fad, or an exaggeration by many, some of whom are possibly interested in the suppression of investigation and who would rather see things go on just as they have been without disturbance. In the present day, competition in every department of industry is so great that one need not be surprised at the deflection of some persons, not imbued with the most rigid honesty, who will resort to means that lead to injustice, dishonesty, and even crime.

We know and have realized that the drug trade is engaged in sophistication, dilution, and substitution. Though we have many honest and conscientious pharmacists, yet it is not to be expected but that there may be dishonest ones in the same proportion as in other industries. I was called in consultation with a brother physician on a case of puerperal fever which need not be described. Asked what I thought of the patient, I replied, "With a pulse of 125 and such an enlarged and tender abdomen, you are going to have a funeral unless her circulation is controlled," and suggested the fluidextract of veratrum viride. He replied that he had lost all confidence in its virtues, and that the woman had already been taking twelve drops for the last twenty-four hours. I asked whose preparation he used and where he procured it. He answered, "From our druggist, and I am sure it is Blank's as I saw the label on the bottle." Stepping somewhat over the bounds of a consultant, I offered to be responsible for the result for twenty-four hours if he would give her my preparation. I also requested him to bring some of his fluidextract with him the next day.

My preparation is diluted as follows:—

℞—Fld. ext. verat. viride	1 part
Spiritus etheris nitrosi	3 parts
Syr. simp	4 parts

making one drop of fluidextract in eight.

We began with twenty-four drops every three hours, and increased the dose one drop of the mixture after each interval until we returned. The next day we found the pulse very much reduced in frequency and her abdomen less tender. On proceeding into the next room for consultation, I partly filled two tumblers with water and added ten drops of fluidextract to each. The water containing my extract turned milky by the precipitation of the alkaloids, his extract simply discolored the water like molasses. I never buy veratrum from a druggist, but get direct from Blank's establishment. If there is anything wrong, I know whom to accuse. Our patient made a happy recovery.

The failures in the use of veratrum viride are generally due (1) to a want of a pure and reliable preparation and (2) to the manner of its use. In a case suitable for its use, do not discontinue it when you have the full effect, but reduce the dose one half and carefully watch the case, increasing or diminishing it until you can hold the circulation. I have done so for a week or longer. In case of a weak heart give strychnin *ter in die*, it will not counteract the effect of veratrum. You will occasionally meet with a patient whose nervous irritability will thwart the utmost limits of the use of veratrum, give such a patient a full dose of morphin, and on your next visit you will be agreeably surprised at the happy effect.

We need not be astonished at the adulteration of drugs, when we daily see the papers filled with the revelations of investigation going on in almost every department of business, from the watering of stocks to the adulteration of drink and the filth of canned food preparations. If you wish to know the extent of the rascality, read these reports and visit a cannery in full operation. Suppose for example that I act as druggist. I will not adulterate with any harmful ingredient, but instead of a gallon of pure alcohol at two and a half dollars I furnish you three quarts of alcohol diluted with one quart of water and charge the full price. You will not know the difference in the quality, but I have received my profit on the alcohol and in addition have stolen sixty-two cents. In the same proportion of dilution I will sell you fluid-extracts, tinctures, etc. You need not be surprised that you sometimes fail to obtain results. How many patients are buried—the physician innocent, but what of the druggist?

No doubt you have had visits from gentlemen with grips filled with the most beautiful tablets of all the colors of the rainbow, said to cure all the ills that flesh is heir to. Just make your diagnosis and here is your tablet. And in case you might overlook one or two symptoms, just use one of those loose-jointed shotgun pink tablets. Let me give you a specimen copied from the manfacturer's formula. The following represents the ingredients of one tablet:—

Ext. Vibum. prunifol	1 gr.
Ext. Vibum. opulus	1 gr.
Ext. Aletris farinosa	½ gr.
Ext. Helonias dioica	½ gr.
Ext. Michella repens	½ gr.
Caulophyllin	¼ gr.

Is it not very comprehensive and extensive? I will give just one more.

Manganese dioxid	1 gr.
Iron reduced	1 gr.
Ext. gentian	1 gr.
Ext. cascara	½ gr.
Ext. nux vomica	⅛ gr.
Capsicum powder	⅛ gr.
Acid arsenous	1-50 gr.

Here we have six ingredients in one and seven in the other, one will be sure to hit the mark. *O tempora! O mores!* particularly the *mores*.

There are tricks in all trades but ours. I would not for a moment intimate that any physician would be guilty of adulteration, but you know we sometimes do like advertising on the sly. The hydrocarbon compounds are so numerous and their names so comprehensive that it would be a waste of time to enumerate them. Among those of most value as antipyretics are the phenylacetanamid, the dimethyloxyquinizin, and the para-acetophenetidin. Among the hypnotics the most extensive, in name at least, is the diethylsulfondimethylmethane. I have purposely omitted the common name as you will the more readily understand their chemical composition and their use. The younger members of our profession should always use the scientific name especially among their patients and the laity, as they will be credited with the most profound knowledge and scientific attainment.

The following case, although hypothetical, may not be an unusual occurrence in the advertising line:—

A young wife, who in her maidenhood was of fine physique, beautiful, buoyant, and rosy, is about to become a mother. The doctor is called who, by the by, is just fresh from the medical college and with vast experience in numerous hospitals. He finds labor progressing finely, os dilating, position of the child all right, pelvic dimensions ample, but the doctor is pressed for time, he has so many patients demanding his attention. He might have ample time to visit some of the most important, but then the child might be born in his absence. Not because nature is inadequate to accomplish the termination of labor, but as he has never hurt his hands with the forceps nor sprained his back, he delivers the woman with the forceps under the influence of an anesthetic. She awakens to realize that her sufferings for the present are over. What a magnificent doctor! She is informed that the child could not have been born without his most careful assistance. His wonderful skill and ability, and his possession of all the swift and sure means of speedy delivery are bruited through town and country. A few months have passed, the young mother has lost her buoyant step, the roses on her cheek are faded, her strength is gone, and her life has become a burden. Next we find her in the gynecologist's shop for repairs.

A few days ago I read an article in one of our most respectable medical journals. where a doctor reported fifty-one cases of undoubted and virulent diphtheria, all of which recovered. There should be no deaths except from old age where such a doctor practices. We have not had an epidemic of diphtheria for several years within our bailiwick, but we have had some cases of tonsillitis. Just now womb disease and consumption are quite prevalent, but we old mossbacks are utterly incompetent to manage these cases. Indeed, it is surprising that the population has not greatly diminished.

But to change the subject: If we take a glance at the rapid strides which our science has made in the last fifty years and the vast extension of the field of knowledge required, it is not surprising that the demand for more time and more thorough preparation of those who desire to enter our ranks is heard from every quarter.

Notwithstanding the improved facilities for acquiring knowledge, no one can in a lifetime make himself proficient in all the departments of medical science. Hence, a division of labor to some extent, and consequently the specialist becomes a necessity. Yet the intelligent physician, no matter to which specialty he may choose to direct his labors, should at least be well fortified with a general scope of knowledge. In order to meet the present demands for a higher standard of medical education, it becomes necessary that a solid classical foundation be laid before the medical superstructure is begun. Without this, the practitioner will be cast about on every trivial wind of doctrine, or will settle down to the level of a mere routinist. Unless the rank and file of our profession is well drilled and exercised in the manual of the arms of knowledge and ethics, you will fail to enhance the *esprit de corps* of our profession.

In conclusion: Let every one be true to himself and the profession. Let us cherish its best interest and each one esteem the other better than himself, and show by a rectitude of conduct, and honesty of purpose that the only desire is for the welfare and the elevation of the profession.

SIMPLE ELIXIR AS A VEHICLE IN PRESCRIPTIONS INTENDED FOR CHILDREN.*

BY EDGAR F. HEFFNER, PH. G.,
Lock Haven.

(Read at the Twenty-ninth Annual Meeting Pennsylvania Pharmaceutical Association.)

Prescriptions coming to me to be filled and calling for simple elixir as a vehicle, or in considerable quantity, which prescriptions I knew to be for children of tender years, led me to investigate the physician's idea of this preparation and the quantity of alcohol it contained.

It astonished me to find occasionally a physician who thought it contained no alcohol, while the majority were of the opinion that simple elixir, and the medicinal elixirs of which it forms the basis, elixir calisaya, elixir lactopeptine, elixir gentian, etc., were of a very slight alcoholic strength. Prescriptions have come under my observation, in my present location, and in other localities, like the following:

I.

For a child four months old:

Sodii bromidi . . . . gr. viij
Elix. simplicis . . . . oz. i

Sig: Teaspoonful every half hour or one hour as needed.

II.

For a six-year old child:

Potass. bromidi . . . . gr. xlviij
Elix. val. ammon . . . . dram iv
Elix. simplicis, q. s. . . . . oz. iij

Sig: One or two teaspoonfuls in water every one or two hours as needed.

No physician would give a child four months old a quarter teaspoonful of alcohol every half hour, yet that is what the child would have been given had the prescription been filled as written.

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*Authorized by vote of meeting for distribution among the Medical Journals of the United States.

Compared with beer it would have been the same as giving a tablespoonful, or been equal to two teaspoonfuls of wine, or over half a teaspoonful of whisky or brandy.

Prescription No. 2 shows the same thing in a more frequently used form—the six-year-old child would get with each two or four grains of bromid the equivalent in strength of one half or one whole teaspoonful of whisky, which would effectively counteract the sedative effect of the bromid.

These examples need no extended comment as to the possible injurious effect of the alcohol on children, as we all fully appreciate them. It impresses on our minds the fact, however, that we must occasionally refresh the minds of our medical friends in cases of this nature, and the information, if given in the proper spirit, will be thankfully received by any physician needing it.

In fact, it is a question in my mind if the very common practice of giving bromids and similar sedatives in simple elixir is a good one, as the effect of the bromid is seriously interfered with by the alcohol it contains.

While on the subject of simple elixir and bromids, I wish to present an example of a prescription fairly common in some localities. It is as follows:

Sodium bromid	dram iv
Chloral hydrate	dram iv
Simple elixir, q. s.	oz. iv

Sig: Two teaspoonfuls in water every half to one hour.

This at first makes a bright clear solution and the chemical incompatibility of chloral and alkali bromids in alcoholic solution would be generally overlooked. On standing half an hour the chloral alcoholate will come to the top in a clear layer about one fourth of an inch thick, and of a color very closely resembling the rest of the prescription. I know of one case in which the mixture was dispensed without a "Shake" label, and the patient got nearly all of the chloral in the form of alcoholate at the second dose.

The use of an aromatic water and simple syrup as a vehicle in prescriptions of this nature would obviate any danger.

CLINIC FOR HOME TREATMENT OF THROAT AND CHEST DISEASES.

The Philadelphia Clinic for Home Treatment of Chest and Throat Diseases, 519 South Fifteenth Street, has opened evening clinics in addition to the day clinics which have been running since March. These are for free treatment to the 3000, among the 9000 consumptives living in this city, who annually earn over $1,000,000, but who, without medical care will in a few years become unfit to work, and many of whom, in all probability, will have to be maintained in hospitals at an added expense of another $1,000,000, making a total loss in wages and in cost of maintenance of over $2,000,000 a year. The object is to lighten the struggle of these people during this trying period of their life, to help save their wages, and to forestall the danger of their becoming public charges. Dr. Frank Read is president of the Board of Managers, and Dr. Thomas J. Mays is medical director of this institution.

TUBERCULOSIS AND PATENT MEDICINES.

G. R. Pogue, Denver (*Journal A. M. A.*, March 3), thinks that our therapeutic nihilism and teaching that only outdoor treatment is effective for tuberculosis, has had a bad effect and has driven many victims of the disease to the use of proprietary remedies that immodestly and incorrectly advertise their alleged efficacy. He was recently told by a prominent pharmacist that while the sale of patent medicines had notably fallen off, he still sold large quantities of certain of them to consumptives. Climatic resorts to which consumptives flock are a bonanza for the advertising quack and patent medicine vendor whose stock argument is that physicians admittedly have no cure for the disease as compared with their unfailing panaceas. The poor consumptives are only too ready to grasp at any straw, hence they fall readily into the hands of these quacks. Our therapeutic nihilists, as regards consumption, could do better, Pogue thinks, if they would turn their talents in some other direction when they write for the information of the laity.

In the presence of anemia or of faintness, without other apparent cause, inquire concerning the passage of black stools. The condition may result from hemorrhages due to an ulcer or neoplasm of the small intestine. —*American Journal of Surgery.*

The Pennsylvania Medical Journal.

PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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York—G. E. Holtzapple, M. D., York.

All communications should be addressed to the Pennsylvania Medical Journal, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

Athens, December, 1906.

"Look not mournfully into the Past. It comes not back again. Wisely improve the Present. It is thine. Go forth to meet the shadowy Future without fear, and with a manly heart."

MILK MODIFICATION WITH SODIUM CITRATE.

When, for one reason or other, it is impossible to nourish a young child with mother's milk, there is at times no little difficulty in securing a satisfactory substitute, more especially during the heated term. Milk modification has helped to solve many of the problems arising in this connection, and it represents one of the most noteworthy advances in an important field of medical practice. For the purpose of subdividing the curd, and thus favoring proteid digestion, it has long been customary to add limewater to the milk mixture. In recent years sodium citrate has been proposed as a substitute and its use has yielded satisfactory results in the hands of numerous clinicians. For the purpose of determining whether this substance exerts a chemical or a physical effect, Mr. Joseph W. England (*Journal of the American Medical Association*, October 20, 1906, p. 1241) undertook a series of experiments with milk and various reagents. As a result of these observations Mr. England reaches the conclusion that sodium citrate, which is a neutral salt, has no decomposing action on calcium-casein in the cold, although it does exert no unimportant physical influence on the casein of milk. When milk to which sodium citrate has been added is brought in contact with the gastric juice, the sodium citrate is decomposed into sodium chlorid, which has important physical, chemical and therapeutic properties in the digestion of the proteid of cow's milk. There is some doubt whether the free citric acid formed has any more important therapeutic value than the hydrochloric acid of the gastric juice. E.

AMERICAN MEDICAL ASSOCIATION MEDICAL DIRECTORY.

Nine years' experience in keeping the society's roll of membership and the mailing list for the JOURNAL has taught us the impossibility of keeping a large list of names and addresses absolutely correct to date, and makes us charitable for errors found in a medical directory. In October we used Polk's Medical Directory for 1906 in sending sample copies to physicians in this state. An assistant went through the Pennsylvania part of the directory cutting out duplicates, names of physicians known to be deceased, or having a doubtful address. The writer then spent thirty hours with an assistant in re-revising the names and correcting addresses, omitting names of those reported as having graduated previous to 1855. Wrappers requesting notification of non-delivery were used in mailing the October JOURNAL to the remaining physicians. Notices were received from postmasters giving removals of more than one hundred, and as many more marked either "unknown" or "address unknown."

We have recently taken three days, with two assistants, in looking over the proof sheets for Pennsylvania, of the new medical directory soon to be issued by the American Medical Association, for the purpose of verifying membership in the Medical Society of the State of Pennsylvania and incidentally correcting any errors recognized.

The above work done within the past six weeks has enabled us to form a fairly accurate comparison of the merits and accuracy of the two directories. We are sure that the new directory will be the most complete, accurate and satisfactory medical directory of the United States ever published.

The American Medical Directory shows when and how the physician became a legal practitioner. When a name is duplicated, as, for instance, when a physician resides in Allegheny and occupies an office in Pittsburg, his name appears in each place with the other address in brackets. Physicians legally registered as such but now retired or engaged in the practice of pharmacy or dentistry are so indicated. Names of members of a county society are printed in capitals. Aside from this distinction all physicians are treated exactly alike and given exactly the same amount of space and consideration, regardless of whether they are or are not subscribers to the directory. S.

"THE FUTURE OF THE MEDICAL PROFESSION."

The above is the title of the masterly address by President Elliott, delivered at the dedication of the new buildings of the Harvard Medical School. It has been the subject of much favorable comment in the medical press.

Dr. Elliott undertakes his task in a comprehensive way which is truly admirable. He points out that civilization exposes human beings more and more to disease; and then he emphasizes the fact that "if civilized society is to endure under its new exposures and dangers, it is clear that the medical profession must take up with new ardor the work of preventing approaching diseases in addition to treating disease arrived." The old time function of the physician in attending persons actually sick and seeking to cure or mitigate their ailments is one which will in the future as in the past, he points out, continue to engage the services of medical men. "But another sort of physician will be at work in the twentieth century preventing the access of epidemics, limiting them when they arrive, defending society against bad food and drink, and reducing to the lowest terms the manifold evils which result from the congestion of population.'' To illustrate he points out that ''thousands of physicians all over our southern states must for years be teaching the people how to protect themselves from yellow fever.'' Then he pays a high tribute to Walter Reed for showing how this disease is communicated. He also refers to the popular education now in progress regarding tuberculosis.

Dr. Elliott goes on to state it to be the duty of the medical profession to teach the entire population how diseases are caused and communicated. This function he asserts calls for ''new adjustments and new functions of the medical schools.''

The value of comparative studies in anatomy, physiology, zoölogy and botany are emphasized as of great value in preparing the physician for his work. The contributions of scientists, not physicians, like Pasteur and Metschnikoff, have done much for our profession; and so Dr. Elliott concludes that we must ever be on the lookout to utilize the aids which the natural sciences furnish.

President Elliott's address has a direct bearing on the splendid work which has been inaugurated in this state by Dr. Samuel Dixon in his capacity as the head of our health department. It is just such a campaign as would meet some of the new requirements of the medical profession which Dr. Elliott so clearly apprehends. The work of Dr. Dixon's department is manifold: the collection of vital statistics, the examination of water supplies, the chemical and bacteriological examinations of various fluids of the body and of the water, the distribution of antitoxin, the enforcement of the vaccination law, etc.

But one feature of the work of this department seems to call for especial emphasis in the light of Dr. Elliott's remarks; namely, the campaign of education which it has inaugurated. The department has issued a series of circulars of information regarding the various contagious diseases and other matters pertaining to hygiene intended to meet the needs of various classes of readers, written in the simplest and most direct language. Surely this is a most commendable step and ought to be followed up.

Would it not be feasible for Dr. Dixon to send appointed lecturers to our various teachers' institutes and thus make each public school teacher in turn a better instructor in hygiene? And would it be too much to hope that later such a corps of lecturers might address various popular audiences throughout the state with the view to doing what Dr. Elliott says is the duty of our profession,—''teaching the whole population how diseases are caused and communicated''? In Dr. Elliott's words concerning this duty: ''To discharge it well requires in medical men the power of interesting exposition, with telling illustrations and moving exhortation. Obviously the functions call for disinterestedness and public spirit on the part of the profession.''

The profession has looked with some suspicion on the physician who essays to address popular audiences on medical topics. But can not this obstacle be overcome? For example, a trained hygienist, not a practicing physician, and officially connected with the State Health Department might, it would seem, acting in his official capacity, discharge such a duty acceptably and without laying himself open to the suspicion of drumming up practice. These suggestions are respectfully referred to Dr. Dixon for his careful consideration.

Of the 9,000 doctors practicing in this state probably ninety-nine per cent. earn their living by direct attendance on persons actually sick or disabled. The public as individuals pays for these personal medical services. The time has now arrived when the public, as a whole, as a state, municipality, etc., would do well to employ more than the remainder, or one per cent., of the physicians of Pennsylvania. Probably ten per cent., or 900 physicians, could thus be profitably employed. The individual layman must be educated in this matter and shown that it is to his advantage to pay (through his share of the taxes) part of the services of a physician, whose duty is not to attend to him or members of his family personally when ill, but to look after the welfare of the public as a whole, and that in so doing he and his family will receive in benefit (disease prevented, etc.) a full and generous return for all he pays out.

For these new duties as hygienists, public sanitarians, etc., physicians must be especially trained. A sufficient number of them will be speedily qualified when the public shall ask for what medical science is to-day in a position to give. But to repeat, a campaign of education on all hands is needed. Let the profession support Dr. Dixon in the splendid work of education he has begun, and be thankful that one among the laity (if such a scholarly man as Dr. Elliott, with his clear grasp of medical problems can be called a layman) has so forcibly set forth this subject for the general public in such clear and convincing language. D.

THE PUBLIC HEALTH DEFENSE LEAGUE.

An important conference for devising ways and means for safeguarding the public health and morals of America against medical quacks and charlatans was held in New York City on November 15. The success of such an important movement as this depends upon numerous factors, but especially so upon the high moral character, tactfulness, and disinterestedness of the men who formulate the formative policy of such an organization. Those who are working in this movement recognize the advisability of keeping the influence of the medical profession in the background for the fear of awaking the false cry of "self-interest," an argument too often effectually used before legislative committees to defeat the passing of laws intended for the good of the public. In another column is given an account of what took place at the conference at which there was launched the Public Health Defense League. We shall watch the future workings of this society with interest. H. W. C.

Editorial Notes.

American Association for the Advancement of Science.

The fifty-seventh annual meeting of the American Association for the Advancement of Science and the eleven affiliated scientific societies will be held in Columbia University, New York City, December 27 to January 2. L. O. Howard, Cosmos Club, Washington, D. C., is the permanent secretary, and Dr. J. McK. Cattell, Columbia University, N. Y., is the secretary of the local executive committee. S.

Mississippi Valley Medical Association.

The annual meeting of the Mississippi Valley Medical Association was held at Hot Springs, Ark., November 6, 7, and 8, 1906. The following officers were elected: President, H. Horace Grant, M. D., Louisville, Ky.; secretary, Henry Enos Tuley, M. D., reëlected, Louisville, Ky.

Columbus, Ohio, was selected as the next place of meeting, during October, 1907.

It was voted at this meeting to offer a prize of $100 to members of the Association for the best essay recording some original research work in the Mississippi Valley.

Henry Enos Tuley, Secretary.

Appointments.

Dr. W. H. Hartzell has appointed Dr. J. Hartley Anderson, Pittsburg, to deliver the oration on genitourinary surgery at Reading next September in place of Dr.

Orville Horwitz, Philadelphia, who expects to be in Europe at that time. President Gable has announced the following appointments: Dr. Charles K. Mills, Philadelphia, to fill vacancy on Committee on Inebriate Hospital caused by the declination of Dr. Charles W. Burr; Dr. Albert P. Francine, Philadelphia, to fill vacancy on Committee on Religious Newspaper Advertising caused by the declination of Dr. John B. Roberts; and Dr. Andrew J. Barchfeld, Pittsburg, to represent the Medical Society of the State of Pennsylvania on the National Legislative Council of the American Medical Association. S.

Committee on Scientific Work.

A meeting of the Committee on Scientific Work was held at the University Club, Philadelphia, on November 24. There was a full attendance and the program for the Reading session was blocked out as follows:—

Tuesday Morning, General Meeting, Introductory Exercises.

Tuesday Afternoon, Section Work, Sections A, B, and C.

Wednesday Morning, General Meeting, Annual Orations.

Wednesday Afternoon, Section Work, Sections A, B, and C.

Thursday Morning, Section Work, Sections A, B, and C.

Thursday Afternoon, General Meeting, Symposium on the Kidney.

From the above it will be seen that there will be three general and three section meetings. The officers of the sections will arrange their programs with the idea of each presenting one meeting of especial interest to the general practitioner, which will not conflict.

The section chairmen are as follows: Medicine, Dr. John A. Lichty, 4634 Fifth Avenue, Pittsburg; Surgery, Dr. John H. Gibbon, 332 S. 15th St., Philadelphia; Allied Specialties, Dr. Lewis H. Tayor, 83 S. Franklin St., Wilkes-Barre.

THEODORE B. APPEL, Chairman.

Changes in Membership of County Societies.

The following new names have been reported from November 1 to December 4: Charles Walter Delaney, Edwin B. Miller, Altoona; Thomas F. Neal, Hollidaysburg; Charles L. DeWolf, Chicora; Roy L. Stackpole, Butler; James B. Thompson, Prospect; John W. Barr, Nanty Glo; James Jefferson, Johnstown; O. A. Watkins, St. Benedict; James M. Brackenhoff, Bellefonte; Charles B. Shortledge, Lima; S. G. Logan, Tyler; H. P. St. Clair, Punxsutawney; George H. Boyer, James S. Smith, Allentown; M. H. Miller, Seigfrieds; Asher Kriebel, Lynnville; Edward J. Morrison, Frederick G. Sanford, Jersey Shore; Oree N. Chaffee, Rew City; Erwin S. Briggs, Hazelhurst; Samuel W. Swigart, Lewistown; Alvin A. Wertman, Tannersville; Harry B. Fralic, Belfast; Samuel Brister, Thomas A. Cope, William H. Dingee, Mark B. Dwight, Walter S. Freeman, D. Clinton Guthrie, Walter S. Hargett, Katharine R. McDowell, Evan W. Michener, Seymore D. Ludlum, Ellen C. Potter, A. H. C. Rowand, Albert C. Santee, Eugene Swayne, Philadelphia; Simon D. Shive, McClure; Walter E. Hickeman, Confluence; Harry C. Hoffman, Meyersdale; Snyder J. H. Louther, Somerset; Sidney W. Rivenburg, Clifford; John A. Shoemaker, Knox; Edgar V. Thompson, Franklin; Howard W. Day, William D. Hunter, John N. Weddle, Arthur R. Wilson, Monessen; William L. Finnell, Salina; John F. Long, Hugh W. Love, Harrison City; John G. Burkholder, Ruffsdale; C. R. Newton, Nicholson; Kinnard J. French, Factoryville; John K. Blank, Wrightsville; Henry J. Bennett, York; Jacob M. Gross, Dover.

Thomas H. Mackin (University of Pennsylvania, 1900) died at his home in Reading, October 29, from cardiac failure, superinduced by asthma, aged 29.

Charles I. Hoffman (Jefferson Medical College, '70) died at his home in Lebanon, November 27, from a complication of diseases, aged 59.

J. Z. Gerhard (University of Pennsylvania, '68) died at his home in Harrisburg, November 20, aged 64.

David H. Birney (University of Pennsylvania, '85) died at his home in Philadelphia from injuries received in a street car accident, November 23, aged 44.

Ulysses E. Dornsife of Tunkhannock has resigned from the Wyoming County Society.

William Muir Angney (Jefferson Medical College, '78) died at the Pennsylvania Hospital, Philadelphia, November 19, from cancer of the stomach, after a prolonged illness.

Boardman Reed has resigned from the Philadelphia County Medical Society.

Henry A. Lakin has removed from New Chester to New Germantown.

Wilson B. Cathcart has removed from Pittsburg to Mt. Pleasant.

Samuel A. Sturm has removed from Pittsburg to 2602 North 17th St., Philadelphia.

Alexander R. Craig has removed from Columbia to 114 S. 18th St., Philadelphia.

H. O. Kingsley has removed from New Albany to Ricketts.

John B. Devor has removed from Harrisburg to Chambersburg.

De Forrest Willard has removed from Philadelphia to Lansdowne.

Present membership 4688. S.

State News Items.

Diphtheria in Tyrone has caused the closing of the schools.

Dr. Albert E. Roussel has removed to 2108 Pine St., Philadelphia.

Dr. Frank Hamilton Crawford died at his home in Mars, November 18, aged 32.

Dr. Andrew MacFarlane died at his home in Philadelphia, November 7, aged 60.

Dr. Maurice E. Stayer, Woodbury, and Miss Maud Gardner, Rockwood, were married October 24.

Dr. Henry Horning has resigned as state quarantine physician at the Marcus Hook station.

Dr. Harry A. Spangler and Miss Helen E. Krise, both of Carlisle, were married December 4.

Dr. Arthur Newlin and Miss Janet Cuyler Sims, both of Philadelphia, were married November 14.

Mrs. Fannie Keim, wife of Dr. Harry J. S. Keim, Catasauqua, died November 26, from typhoid fever.

Dr. George W. Overholser and Miss Bessie K. Frantz, both of Reading, were married November 28.

Dr. Henry Sykes was on November 22 appointed chief resident physician at the Philadelphia Hospital.

Dr. David Dale, Bellefonte, and Miss Anna Dunlop McPherson of Gettysburg, were married October 24.

Dr. J. E. Sweet has been placed in charge of the department of experimental surgery, University of Pennsylvania.

Dr. John B. Roberts addressed the graduating class of the Nurses' Training School, Norristown Hospital, December 3.

Dr. John A. Laros (University of Pennsylvania, '62) died at his home in Coopersburg of apoplexy, November 15, aged 68.

Dr. Robert P. McReynolds, Philadelphia, and Miss Frances Cornelia Coulter, Los Angeles, Cal., were married November 22.

Reese Wiggles, supposed to be the smallest man, died at Wilkes-Barre, last month, aged 53. He was only thirty-seven inches tall.

Dr. John A. Lichty, Pittsburg, addressed the Crawford County Medical Society, November 20, on "Failing Cardiac Compensation."

Dr. William H. Chandler, emeritus professor of chemistry, Lehigh University, died at his home in Bethlehem, November 23, aged 65.

Dr. Jeremiah P. Smith (Jefferson Medical College, '87) died at his home in Linglestown, November 1, from cerebral hemorrhage, aged 38.

Dr. Brooke M. Anspach of Philadelphia, and Miss Martha McCormick, daughter of Dr. H. G. McCormick, of Williamsport, were married November 1.

Dr. Ira Fix of Turtle Creek, died at the Braddock Hospital, November 22, from injuries received some days ago by a street car striking his automobile.

Dr. S. Weir Mitchell delivered the address to the graduating nurses of the Orthopedic Hospital at the annual commencement exercises held November 16.

Dr. William J. Mayo, Rochester, Minnesota, delivered the Mütter Lecture for 1906, College of Physicians, Philadelphia, December 4. Subject: "The Principles Underlying Surgery of the Stomach and Associated Viscera."

Vaccination Rules. Dr. Samuel G. Dixon, state health commissioner, says that after three unsuccessful attempts to vaccinate a child, the pupil shall be permitted to attend the public schools. The question of the failure of repeated attempts of vaccination of school children was placed by the Supreme Court in the hands of the Department of Health for decision, and the above course has been adopted. Dr. Dixon says: "When the cases that we received inquiry about were within the limits of a borough or city having a board of health of its own, we suggested that after two unsuccessful attempts to vaccinate a child the third attempt be made by or in the presence of the physician of the board of health. If this attempt failed, then the physician of the board, acting in his official capacity, should authorize the admission of the child. We have also endeavored to deal with the cases of children where there was reason to believe that the child's physical condition did not make vaccination at the present time advisable. The city and borough health boards can act in such cases. Where there are no health boards the county medical inspectors are clothed with authority."

Official Communications.

"Warren Sanatorium."

To the Members of the State Society:—Because of certain charges made at your state meeting and rumors brought to the attention of your district censor against some members of the Warren County Medical Society who had interested themselves in the attempt to establish a cancer sanatorium, your censor called upon these members to make a statement to the local society and the other county societies. Accordingly, at a regular meeting of the Warren County Medical Society, the following statements were made.

1. The sanatorium consists as yet of nothing but a corporation of six physicians.
2. A preparation is used hypodermatically in special cases, the formula of which is known to one of the six and which was obtained from a "quack."
3. The value of this preparation seemed so great and so impressed the physicians who were allowed to investigate its actions that they consented to make an agreement with the "quack" not to divulge the formula until they had had a chance to test it and could afford to pay the very large sum demanded.
4. No advertising, save one circular letter to neighboring physicians, has been indulged in.
5. No unwarranted claims have been made for the treatment either to the profession or to the patients.
6. It was the intention of the organizers, should an institution be established, to use all approved methods for the treatment of cancer.
7. If this particular method of treating superficial cancers proves to be of permanent value, they propose to make it available to the profession.

Your censor can say that the members composing the organization have always enjoyed an excellent reputation in the community and among the profession, and he is all the more grieved that this "cure" should have lured them aside, even if only for a time, from the time-honored and noble methods which shun secrecy and make the experience of one the common property of all. He believes, however, that they have been aroused to the unwisdom of their course and as speedily as possible will eliminate all semblance of quackery from their organization. He believes it is not their desire nor intention to incur the further criticism or displeasure of their fellow members, here or elsewhere.

Your censor hopes that the good reputation of the Warren County Society will not be permanently injured by this breach of ethics on the part of some of its leaders. He asks for the earnest coöperation of the officers of the state society, and members of the other societies in helping him to wipe out the stain by forgetting the incident and allowing the society to retain its good name.

The county is exceptionally free from irregulars and quacks and the members of the society are most honorable in their dealings with each other. We believe that Warren County has a larger proportion of its eligible physicians enrolled as members of the medical society than any other county.

Your censor will be most pleased to receive suggestions from others in reference to the matter in question.

Respectfully,
M. V. Ball, District Censor.

Report of Committee on Insurance Fees.

To the Medical Profession of the United States:—At the Boston session of the American Medical Association the undersigned were appointed as a committee to investigate and to report on the insurance-examination question. We were instructed to confer with the insurance companies which had reduced the medical examination fee from $5 to $3, and, if possible, to induce them to return to the original fee. Nothing could be done during the summer, owing to the fact that representatives of the companies, as well as some members of the committee, were absent on their vacations, either in Europe or at other distant points.

At the earliest opportunity after the vacation the matter was taken up with representatives of the Equitable, the Mutual and the New York life insurance companies. The last company, it will be remembered, had reduced its fees eleven years ago, and its officers declined at first to meet us in our official capacity. When this technicality was brushed aside it was found that none of these companies would restore the fee unless all should agree to do so. The New York Life Insurance Company apparently blocked the concerted action, essential to a restoration of the fee to $5, and a compromise proposition, made by us, was also rejected. Therefore, our efforts to influence the companies to restore the fee to a just and proper one have failed.

We were also instructed to make known to the profession, through *The Journal of the American Medical Association* or otherwise, the results of the negotiations with the companies, and to advise what policy should be pursued in the event of failure to have the fee restored. In doing this the following facts should be stated:—

First.—The reduction of fees was made by the companies without consultation with their examiners, either collectively or individually.

Second.—The companies insist that they be left to deal with individual physicians and not with the profession as a whole.

Third.—On the other hand, they themselves have practically agreed to stand together in maintaining the reduced, insufficient and, we believe, unjust fee.

Fourth.—The companies claim that physicians' fees were reduced on account of the legislation in New York. The facts do not warrant this statement. The fee was reduced by the New York Life eleven years before the present law in New York was thought of, and by the others before it was proposed. The recent action of the Manhattan, a New York company, restoring the fee to $5, only emphasizes the correctness of our position on this point.

Fifth.—We find that the so-called economic measures instituted by these insurance companies have apparently been chiefly in the medical department, and that the medical department was almost the only one which was not smirched by the past history of extravagance practiced by the officers of the companies,

Sixth.—We believe that the companies can and should continue to pay a minimum fee of $5 for medical examinations, which seems to us to be a reasonable and just remuneration.

These are the facts, and we refer the question to the county and state societies for such action as they may deem wise and proper. We urge, however, that the will of the majority be not made a test of membership, in accordance with the modern idea in the profession that kindness and moral suasion should be substituted for the old methods of ostracism and exclusion in all of our work.

J. H. MUSSER,
Chairman,
JOHN A. WYETH,
WM. J. MAYO,
FRANK BILLINGS,
J. N. MCCORMACK.

A PARTIAL LIST OF COMPANIES PAYING THE FLAT FEE OF $5.00.

North Western Mutual Life Insurance Co., Milwaukee.
Mutual Benefit Life Insurance Co., Newark, N. J.
Connecticut Mutual Life Insurance Co., Hartford.
The Manhattan Life Insurance Co., New York.
Ætna Life Insurance Company, Hartford.
The Provident Life and Trust Company, Philadelphia.
Commonwealth Life Insurance Co., Louisville, Ky.
Boston Mutual Life Insurance Company, Boston.
Citizens Life Insurance Company, Louisville, Ky.
New England Mutual Life Insurance Company, Boston.
Massachusetts Mutual Life Co., Springfield, Mass.
Nat. Life Ins. Co., Montpelier, Vt.
Pacific Mutual Life Insurance Company of California, Los Angeles.

The Public Health Defense League.

At the Bedford meeting of the Pennsylvania State Medical Society there was appointed a committee consisting of Dr. Henry Beates and Dr. Charles A. E. Codman to attend a conference to be held in New York on November 15, for the purpose of devising ways and means for the protection of the public health and morals of the country. Dr. Codman was not able to attend owing to the fact that he had not yet sufficiently recovered from an operation for appendicitis. I feel glad to have represented the Medical Society of the State of Pennsylvania at this meeting for a large and enthusiastic assemblage having representatives from all parts of the United States convened and permanently formed the Public Health Defense League.

It may not be out of place first to describe a few of the various independent movements which led to the necessity for the formation of such a society, and then briefly to relate what took place at the meeting. Every one knows about the good work which has been carried on by the American Medical Association in the securing of the passage of the Pure Food and Drug Bill, passed at the last session of Congress, and in separating the good from the bad in proprietary articles. During the past several years in New York a movement has been going on which, until the reading of a paper by Mr. Champe S. Andrews before the Medical Jurisprudence Society of Philadelphia, on March 19, 1906, had not attracted the wide attention which it deserved. The public health law of New York for a great many years has expressly authorized the various county medical societies to prosecute those who practice medicine without registration, and many prosecutions have been thus successfully maintained by the Medical Society of New York, which was incorporated in 1896. Our own Philadelphia County Medical Society has also been carrying on, through a special committee, for the past several years, a crusade against the criminal abortionist, while Bok, of the *Ladies' Home Journal*, Hapgood and Adams, of *Collier's Weekly*, and many others have been doing much good in showing up patent medicines in their true light. It was felt that if these independent movements could be united into one organization, better work for the common weal could be accomplished, for a charlatan driven out of one city only too easily takes up his abode in another place without molestation until his methods have excited the wrath of the community in which he resides.

At the conference there were several hundred delegates from nearly one hundred and fifty organizations. Dr. Charles A. Reed of Cincinnati was there representing the American Medical Association; from Philadelphia there were Thomas W. Barlow, Esq., from the Medical Jurisprudence Society; Dr. Albert M. Eaton, from the Medical Legal Society; Prof. B. Alexander Randall and Dr. Robert N. Willson, from the Society for the Study and Prevention of Social Diseases; Dr. Henry W. Cattell, from the Philadelphia County Medical Society; Dr. W. H. Keim, from the Homeopathic Philadelphia County Medical Society; Dr. John D. Boileau, from the Germantown Medical Society; and Prof. J. T. Young, from the American Academy of Political and Social Science.

The meeting was called to order by Dr. Floyd S. Crandall, President of the New York County Medical Society. Dr. Frank van Fleet was selected permanent chairman, but he declined in order that the policy of such an association might not even appear to be dictated by the medical profession. Mr. Austin G. Fox, a prominent lawyer of New York City, who did such good work as attorney for the Committee of Fifteen when investigating the social evil some years ago, was then appointed chairman. President McGowan, of the Board of Aldermen, next welcomed the delegates in behalf of Mayor McClellan. The first speech was by Charles F. Stuart, a reporter for the *Cleveland News*, whose interesting work in having himself first thoroughly examined by competent physicians and then by quacks is described in the November 10 number of the *Journal of the American Medical Association*. Archbishop Farley was represented by Mgr. Lavelle. Eugene O'Dunne, deputy state attorney from Baltimore, Thomas W. Barlow, Esq., former special district attorney of Philadelphia, and Mrs. Martha M. Allen, of the W. C. T. U., were among the chief speakers. Mr. Barlow lauded Anthony Comstock in his speech. As this veteran evil-hater was in the audience, upon the suggestion of Dr. Reed he made a telling speech upon the distribution of immoral literature to the young. It would seem to the writer that no better use of the new society could be made than by at once taking up the question of passing at the next Congress a law preventing the use of the United States mail by unprincipled and immoral characters who gain a living by intruding upon the innocent minds of young women and men facts of such a revolting character as to demand energetic, aggressive, relentless public pursuit and punishment. We have already seen what can be done by appealing to the postal authorities in the recent abortion crusades of Boston, Philadelphia, and New York, and it is the cry of the time for the medical profession to educate the laity with whom they come in contact, to protect our 36,000,000 of the rising generation from this hitherto little known but fearfully widespread evil which, if every citizen knew of its existence, would cease immediately, and those engaged therein be subjected to such a term of imprisonment as would secure the nation against the danger of a reappearance of such an immoral cancer in our midst. Dr. Reed spoke truly when he called attention to the advisability of the new league aiding in every manner in unifying the laws bearing upon public health throughout the various states of the Union. May local branches be formed in every city in the Union! There is still the opportunity of becoming a charter member, the dues having been fixed at one dollar per year.

HENRY BEATES, JR.

Communication.

Illegal Practitioner.

To the Editor:—"Dr." M. S. Kuhn who has been practicing medicine illegally for several years in Mount Pleasant, Westmoreland County, was given twenty-four hours to remove his signs and discontinue the practice of medicine. He did so at once. The matter was reported to the district attorney by the Scottdale Medical Society. M. S. Kuhn was told by the attorney that he must stop at once or they would have to bring suit.

This society has been doing good work in stopping illegal practice. If all the medical societies would take like action the state would soon be free from illegal practitioners.

M. W. HORNER, Reporter.

Medical Board Examinations.

Questions Used by the Pennsylvania Medical Council at Preliminary Examination held October 6, 1906.

BOTANY.

1. Explain the use of the terms *annual, biennial* and *perennial* as applied to plants. Mention two plants of each kind.

2. Give a description of the life history of any plant with which you are familiar.

3. Mention five plants which furnish dye stuffs. Five which furnish medical principles.

4. What plants are known as seedless plants? How are they propagated?

5. Explain the use of the terms *rhizoma* and *tuber*. Mention illustrations.

ZOOLOGY.

1. Mention five orders of birds and state the characteristics of each order.

2. Describe the life history of the *frog*.

3. Mention facts that you know about the *star-fish*. About *coral*.

4. Tell what you can about the manner of breathing of the *dog*, the *butterfly* and the *herring*.

5. Describe the life history of the *silkworm*.

CHEMISTRY.

1. What is an element?
   About how many elements are now known?
   Name ten elements.
2. What are the properties of chlorin?
   How would you proceed to prepare and collect it?
3. How may ordinary alcohol be prepared?
4. What is the composition of ferrous sulphate? Give the formula.
5. What are the chemical symbols for *gold, tin, lead,* and *sulphuric acid*?

PHYSICS.

1. Give illustrations of the different forms of attraction.

2. Describe the plan of the ordinary lifting pump and state the principle upon which it acts. Illustrate by means of a drawing.

3. Give illustrations showing the various sources of heat. Mention three effects of heat.

4. Explain and illustrate what is meant by the conservation of energy.

5. State the theory of the production of light.

GEOMETRY.

1. Define and illustrate the following: Obtuse angle, adjacent angles, alternate interior angles.

2. Construct.—Through any three points not in the same straight line, a circumference can be made to pass.

3. Demonstrate.—The diagonals of a parallelogram bisect, or divide each other into two equal parts.

4. Prove that the area of a triangle is equal to one half the product of its base by its altitude.

5. How long a rope will reach from the top of a pole 30 feet high, to a stake 40 feet from the base of the pole?

Make a drawing to illustrate your work.

ALGEBRA.

1. Divide $4a^2 - 9b^2$ by $2a + 3b$. Multiply the quotient by $2a - 3b$.

2. Add $\frac{2x + 3y}{4}$ and $\frac{3x - 2y}{8}$. From the sum take $\frac{x + y}{6}$.

3. Find the value of x in the following equation:—

$$2x + \frac{x - 3}{2} = \frac{2x - 3}{4} + 24.$$

4. Given $\left\{\begin{array}{l}3x - y = 10\\ 4 + 4y = 12\end{array}\right\}$ to find the value of x and of y.

5. In an orchard ½ of the trees bear apples, ⅓ of them bear peaches, and the remainder, 24, bear plums. How many trees are in the orchard.

6. A gentleman gave 6 cents each to some boys. If he had given then 9 cents each, it would have taken 48 cents more. How many boys were there?

ARITHMETIC.

1. A druggist adds 40 per cent. profit to the price of his drugs. What was the cost to him of a prescription for which he charged $1.75?

2. From the sum of 3⅔, 3⅜ and 2⅙, take 6⅚.

3. Find the value of 5/8 of a vessel if 4/9 of it is worth $32 64.

4. When bank stock pays a dividend of 5 per cent., how many shares ($100) will furnish an income of $750.

5. An alloy of 50 per cent. copper, 30 per cent. zinc, and the rest nickel, forms a substance strongly resembling silver. How much of each metal is there in 1000 pounds of the alloy?

6. Divide 8 by .0125 and multiply the result by .0625.

HISTORY AND CONSTITUTION OF THE UNITED STATES.

1. Give a brief account of the settlement of Virginia.

2. Tell how the United States acquired possession of Texas. Of Arkansas. Of Florida.

3. Briefly describe the cause and the results of the war with Mexico. Mention two principal events of that war.

4. In regard to the following inventions, tell who was the inventor of each and give a brief account of its influence upon the affairs of the nation:

(a) Cotton Gin.

(b) Telegraph.

(c) Steamboat.

5. Explain in what way a person born in a foreign country can become a citizen of the United States.

6. State what qualifications are necessary for a President of the United States.

LATIN.

1. Compare the adjectives, dives, asper, humilis; and the adverbs prope and multum.

2. Name the principal parts of amo.

Write the first person singular and plural of amo in each tense, indicative, active.

3. Conjugate moneo in the passive voice, indicative, present and imperfect.

4. Give the meaning in English of hostis, quinque, mihi, plurimum, and rectus eram.

5. (a) Urbem Romam vocavit.

Name the verb and tell in what voice, mode, and tense it is.

(b) Gallia est omnis divisa in partes tres.

In what gender is Gallia? Parse partes.

6. Translate:

His rebus fiebat, ut et minus late vagarentur et minus facile finitimis bellum inferre possent; qua ex parte homines bellandi cupidi magno dolore afficiebantur. Pro multitudine autem hominum et pro gloria belli atque fortitudinis angustos se fines habere arbitrabantur, qui in longitudinem milia passuum CCXL., in latitudinem CLXXX. patebant.

GRAMMAR AND COMPOSITION.

1. Write a simple sentence, and tell why it is simple. Enlarge or expand it into a compound sentence.

2. Use in appropriate sentences the possessive case, singular and plural of lady, church, I, and who.

The Sower.

3. Fling wide the generous grain, we fling
O'er the dark mould the green of spring;
For thick the emerald blades shall grow
When first the March winds melt the snow,
And to the sleeping flowers below
The early bluebirds sing.—

William C. Bryant.

(a) Select four verbs in this extract and name the subject of each.

In what mode and tense is each of these **verbs?**

(b) Name four adjectives and compare any two of them.

(c) Tell the meaning of *dark mould*; of *emerald blades*; of *sleeping flowers*.

(d) Write the last four lines in natural or prose order.

4. Write a composition of at least two hundred words about *the duties and the pleasures of college life.*

Reviews.

KIEPE'S MATERIA MEDICA AND THERAPEUTICS. A Manual for Students and Physicians attending postgraduate courses. By Edward J. Kiepe, Professor of Materia Medica in the Department of Pharmacy, and Adjunct-Professor of Materia Medica and Pharmacology in the Medical Department, University of Buffalo. In one 12mo volume of 265 pages. Cloth, $1.00, net. Lea Brothers & Co., Philadelphia. 1906.

Materia Medica and Therapeutics by Prof. Kiepe of Buffalo is one of the best of the Medical Epitome Series. Brought up to the last revision of the Pharmacopeia it furnishes all the essential information necessary to refresh the student's memory regarding preparation and doses of the more commonly used drugs. While the physiological and therapeutic action of drugs is but briefly gone into, enough is given to cover in a general way the important drugs in daily use. The chapter on prescription writing could be read with profit by practitioner as well as student.

J. T. H.

SURGERY: ITS PRINCIPLES AND PRACTICE. In five volumes. By sixty-six eminent surgeons. Edited by W. W. Keen, M. D., LL.D., Hon. F.R.C.S. (Eng. and Edin.), Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Vol. I., octavo of 983 pages, with 261 text illustrations and 17 colored plates. Price, per volume, cloth, $7.00, net; half morocco, $8.00, net. W. B. Saunders Company, Philadelphia and London, 1906.

The announcement some time ago of the intention to publish a System of Surgery edited by Professor W. W. Keen in collaboration with some of the most eminent surgeons of America and abroad aroused the interest of the profession. Volume I., devoted to History, Surgical Physiology, Surgical Pathology, Infections, Tumors, Wounds, etc., has been issued. There are many admirable features about the book. The article by James G. Mumford on the history of surgery is a desirable innovation and very interesting. Crile's article on Surgical Physiology is notable, embracing as it does his experiments and results on blood pressure and the methods employed in combating postoperative shock. The articles contributed by John C. DaCosta, Jr., Hektoen, Adami, Freeman, Wood, Frazier, Smith, Nichols, John Chalmers DaCosta, Martin and Bland-Sutton are excellently written and include practically all of the latest facts concerning the subjects they discussed. A feature which will appeal to the profession comprises the numerous illustrations of pathological conditions. In this respect the book is unique among works on general surgery.

The other illustrations, which are numerous, the paper, type and binding are excellent and maintain the high standard established by Saunders years ago. C. H. O.

CHEMISTRY: GENERAL, MEDICAL AND PHARMACEUTICAL, INCLUDING THE CHEMISTRY OF THE U. S. PHARMACOPEIA. A Manual of the Science of Chemistry and its Applications to Medicine and Pharmacy. By John Attfield, F.R.S., M.A., Ph.D., F.C.S., etc., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. New (19th) edition, specially revised by the Author to accord with the New U. S. Pharmacopeia, edited by Leonard Dobbin, Ph.D., F.I.C., etc., Lecturer on Chemistry in the University of Edinburgh, etc. 12mo, 760 pages, illustrated. Price: cloth, $2.50, net. Lea Brothers & Co., Philadelphia, 1906.

The fifth edition of Attfield's chemistry was used by the reviewer when in college, and the seventh when pursuing his medical course. Now we have the nineteenth edition of this manual revised from the eighteenth English edition and adapted to the last edition of the United States Pharmacopeia. "The author's idea of a manual of chemistry for medical and pharmaceutical students is, then, one in which not only the *science* of chemistry is taught, but in which the chemistry of every substance having interest for the followers of medicine and pharmacy is noticed at more or less length in proportion to its importance, and at least its position in relation to the leading principles of chemistry is set forth with all attainable exactness." (Preface.) The author has accomplished his ideal so well and when writing has so kept himself in the student's place that it is no wonder the work has gone through these successive editions. One of the features commending the book to the general practitioner is an index so complete as to require seventy-one pages. S.

KOPLIK ON DISEASES OF CHILDREN. A Treatise on the Diseases of Infancy and Childhood. For Students and Physicians. By Henry Koplik, M. D., Pediatrist to Mt. Sinai Hospital, New York. New (2nd) edition. Revised and enlarged in text and illustrations. Octavo, 868 pages, 184 engravings and 33 plates. Cloth, $5.00; leather, $6.00 net. Lea Brothers & Co., Publishers, Philadelphia. 1906.

This is a complete and practical work for both students and practitioners. While the author goes into clinical details and quotes the views and language of others, his writings are characterized by originality and independence, and at the same time by an absence of unproven theories and impractical methods. The articles on mother's milk, artificial foods, physiology and pathology of the newborn, measles, typhoid fever, meningitis and diseases of the nervous system seem worthy of special commendation. The numerous illustrations and the copious index add much to the worth of the treatise. L. F. P.

OPERATIVE GYNECOLOGY. By Howard A. Kelly, A. B., M. D., LL.D., F.R.C.S. (Hon. Edin.); Professor of Gynecological Surgery in the Johns Hopkins University and Gynecologist to the Johns Hopkins Hospital; Fellow of the American Gynecological Society; Honorary Fellow to the Edinburgh Obstetrical Society; etc. In two volumes. Price $15.00. D. Appleton and Company, New York, 1906.

If Dr. Kelly had not already made his reputation this magnificent work alone would serve to bring him prominently before the medical profession.

This new, second edition has been entirely rewritten and considerably enlarged. The two volumes now contain thirteen hundred and thirty-six pages, eleven plates and seven hundred and three original illustrations.

While Dr. Kelly is a fearless operator when he believes an operation necessary, he is nevertheless able to see more than the surgical side of gynecology, as is shown by the following quotation from one of the new chapters: "I hope that gynecologists are destined to do still better work within the next decade, and I believe that this improvement will be associated with greater caution in undertaking operations, together with a return to the use of many of those local and palliative treatments which were tested and found valuable in the hands of our predecessors."

He has, therefore, added a new chapter on Local and Palliative Treatments, one on Packs and Pessaries and another on Menstruation and Its Anomalies.

The subjects of Anesthesia, Disease of the Ureters, Radical Cure of Hernia, and Gynecological Diseases of Children have all been amply considered in separate chapters, the latter being from the pen of Dr. Elizabeth Hurdon.

The last chapter in the book deals with the more remote results of abdominal operations. The author has investigated a number of cases at a period of from two to three years subsequent to operations and out of 100 women who had submitttted to radical operations, he found sixty-three per cent. entirely relieved, sixteen per cent. greatly relieved, sixteen per cent. partially relieved, four per cent. unrelieved, and one worse after the operation than before. He believes that if drainage had been less extensively used, the proportion of cures would have been much greater. He has seen insanity follow less than one half of one per cent. of abdominal sections, and considers it the most serious of all the sequelæ.

Too much can not be said regarding the most excellent manner in which the illustrator has done his work. The drawings have been made from actual cases and the wealth of material at Dr. Kelly's disposal has been freely used. Among the chapters that are especially conspicuous by reason of the number and quality of the illustrations are those that relate to topographical anatomy and to the surgery of the vaginal outlet. Many of these are in colors as indeed are several in other parts of the book. G. H. B. T.

NEW BOOKS.

Abdominal Operations. By B. G. A. Moynihan, M. S. (London), F.R.C.S., Senior Assistant Surgeon at Leeds General Infirmary, England. Second revised edition, greatly enlarged. Octavo of 815 pages, with 305 original illustrations. Cloth, $7.00 net; half morocco, $8.00 net. Philadelphia: W. B. Saunders Company, 1906.

Obstetrics for Nurses. By Joseph B. DeLee, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. Second revised edition. 12mo of 510 pages, fully illustrated. Cloth, $2.50 net. Philadelphia: W. B. Saunders Company, 1906.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M. D., Professor of Obstetrics in the University of Pennsylvania. Fifth revised edition. Octavo of 915 pages, with 753 illustrations, 39 of them in colors. Cloth, $5.00 net; half morocco, $6.00 net. Philadelphia: W. B. Saunders Company, 1906.

Prevalent Diseases of the Eye. By Samuel Theobald, M. D., Clinical Professor of Ophthalmology and Otology, Johns Hopkins University. Octavo of 551 pages, with 219 text illustrations, and 10 colored plates. Cloth, $4.50 net; half morocco, $5.50 net. Philadelphia: W. B. Saunders Company, 1906.

A Text-Book of Diseases of Women. By Barton Cooke Hirst, M. D., Professor of Obstetrics, University of Pennsylvania. Second edition, revised and enlarged. Octavo of 741 pages, with 701 original illustrations, many in colors. Cloth, $5.00 net; sheep or half morocco, $6.00 net. Philadelphia: W. B. Saunders Company, 1906.

Stenhouse and Ferguson's Epitome of Pathology. By John Stenhouse, M. D., of the University of Toronto, and John Ferguson, M. D., Toronto, Canada. 12mo, 285 pages, amply illustrated. Cloth, $1.00, net. Lea Brothers & Co., Publishers, Philadelphia, 1906. (Lea's Series of Medical Epitomes. Edited by Victor C. Pedersen, M. D.)

A Text-Book on the Practice of Gynecology. For Practitioners and Students. By W. Easterly Ashton, M. D., LL.D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Third edition, thoroughly revised. Octavo of 1096 pages, with 1057 original line drawings. Cloth, $6.50 net; Half Morocco, $7.50 net. Philadelphia: W. B. Saunders Company, 1906.

A Text-Book of the Practice of Medicine. By James M. Anders, M. D., Ph.D., LL.D., Professor of Medicine and of Clinical Medicine at the Medico-Chirurgical College, Philadelphia. Seventh edition, revised and enlarged. Octavo of 1297 pages, fully illustrated. Cloth, $5.50 net; sheep or half morocco, $6.50 net. Philadelphia: W. B. Saunders Company, 1906.

Atlas and Text-Book of Human Anatomy. Volume I. By Professor J. Sobotta, of Wurzburg. Edited, with additions, by J. Playfair McMurrich, A. M., Ph.D., Professor of Anatomy at the University of Michigan, Ann Arbor. Quarto volume of 258 pages, containing 320 illustrations, mostly all in colors. Cloth, $6.00 net; half morocco, $7.00 net. Philadelphia: W. B. Saunders Company, 1906.

Diet in Health and Disease. By Julius Friedenwald, M. D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M. D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second revised edition. Octavo of 728 pages. Cloth, $4.00 net; Half Morocco, $5.00 net. Philadelphia: W. B. Saunders Company, 1906.

Dorland's American Illustrated Medical Dictionary. A new and complete dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and kindred branches; with over 100 new and elaborate tables and many handsome illustrations. Fourth revised edition. By W. A. Newman Dorland, M. D. Large octavo, over 850 pages, with 2000 new terms. Flexible leather, $4.50 net; indexed, $5.00 net. Philadelphia: W. B. Saunders Company, 1906.

Genitourinary Diseases and Syphilis. By Henry H. Morton, M. D., Clinical Professor of Genitourinary Diseases in the Long Island. College Hospital; Genitourinary Surgeon to the Long Island and Kings County Hospitals, and the Polhemus Memorial Clinic. Illustrated with 158 half-tone and photo-engravings and 7 full-page colored plates. Second edition, revised and enlarged. Royal octavo, 500 pages. Bound in Extra Cloth. Price, $4.00 net. F. A. Davis Company, Publishers, Philadelphia.

Golden Rules of Pediatrics. Aphorisms, Observations and Precepts on the Science and Art of Pediatrics, Giving Practical Rules for Diagnosis and Prognosis, the Essentials of Infant Feeding, and the Principles of Scientific Treatment. By John Zahorsky, A.B., M.D., Clinical Professor of Pediatrics, Washington University Medical Department, St. Louis, Mo. With an Introduction by E. W. Saunders, M. D., Professor of Diseases of Children and Clinical Midwifery, Washington University Medical Department. Price, $3.00. The C. V. Mosby Medical Book Company, St. Louis, Mo. 1906.

Saunders' Pocket Medical Formulary. By William M. Powell. M. D., author of "Essentials of Diseases of Children"; Member of the Philadelphia Pathologic Society. Containing 1831 formulas from the best known authorities. With an appendix containing Posologic Tables, Formulas and Doses for Hypodermic Medication, Poisons and Their Antidotes, Diameters of the Female Pelvis and Fetal Head, Obstetric Table, Diet Lists, Materials and Drugs used in Antiseptic Surgery, Treatment of Asphyxia from Drowning, Surgical Remembrancer, Tables of Incompatibles, Eruptive Fevers, etc., etc. Eighth edition, adapted to the New (1905) Pharmacopeia. In flexible morocco, with side index, wallet and flap. $1.75 net. Philadelphia and London: W. B. Saunders Company, 1906.

Societies.

HARRISBURG ACADEMY OF MEDICINE.

Prof. James P. Tuttle, A. M., M. D., of New York City addressed the Harrisburg Academy of Medicine, Friday evening, November 30, 1906, on "The Etiology and Treatment of Mucous Colitis."

He said in part: "If our stools were systematically examined it would probably be found that catarrhal colitis is as common a disease as catarrhal rhinitis. The function of the goblet cell in both organs is to secrete mucus and whatever stimulates these cells, whether it be chemical, mechanical or infectious, increases this secretion.

"If the secretion is discharged at once it appears as a viscid, glairy mucus; if it is retained for any length of time it becomes coagulated and is discharged either as an albuminoid mucus, or as a laminated membrane-like cast.

"If the increase in secretion of mucus in the colon is of a minor degree and is discharged with the normal stool, little or no attention is paid to it, but if it is marked and retained for certain periods, being discharged alone, in masses, it always excites more or less anxiety in the patient's mind, and produces symptoms which are of sufficient import to require careful examination and study.

"The pathology and etiology of colitis have been very little understood; and it is our purpose at present to call attention to the pathologic conditions found associated with, even if they can not be positively proven to be the cause of, the disease.

"Whether the mucus is discharged in its original state, or whether it is partially coagulated in strings, or whether it adheres to the intestinal wall and is subsequently discharged as a laminated membrane depends upon the site, the extent and the character of the irritation. The quality of the mucus is determined by the character and site of the lesion; the quantity, by the extent of the same.

"Where the irritation is low down in the rectum or sigmoid, occasioning frequent stools, the mucus is glairy, unmixed with feces and without lamination. Where the irritation is high up in the bowel and of limited area, it is passed mixed with the feces, and more or less coagulated according to the frequency of the stools.

"The pathologic change in the mucous membrane itself in all the varieties is much the same. It consists of a hypertrophic infectious catarrh with more or less congested or excoriated areas." . . . "The first cardinal feature of distinction to which I wish to call your attention is: Whatever excites peristalsis will produce mucous colitis; whatever restricts peristalsis produces membranous colitis.

"To speak of symptoms of mucous or membranous colitis is putting the cart before the horse. As I have said before, the mucus is a symptom itself, and not a disease."

The writer then enumerates a number of conditions which provoke a tendency to diarrhea, griping, the passage of small quantities of glairy mucus with the escape of flatus, especially on arising in the morning and at various times during the day. Microscopic examination of the mucus frequently shows pus cells, and broken down intestinal debris.

"The diseases associated with colitis are more frequently found below than above forty years of age; viz, ulcerations, acute flexures, adhesions, neoplasms, traumatisms, infections, etc.

"They may be associated with acute pains or there may be no pain whatever.

"Microscopic and chemical analyses of the stools have only shown us that the so-called membrane does not consist of exfoliated mucous membrane but is a nonorganic albuminoid deposit." . . . . "In recent years, however, exploratory incisions and operative procedures in this type of cases have thrown much light upon the subject and we are able now to state with some positiveness that a number of pathologic conditions are associated with membranous colitis and when removed the colitis disappears." . . . "The results of sigmoidoscopy, exploratory operations and surgical treatment have shown clearly that in almost every instance there is an organic cause for the secretion of mucus. These causes consist of some irritation of the colon either pathological, mechanical, chemical or reflex."

"We wish chiefly to discuss membranous colitis and we hope to prove to you the ever present organic cause in this condition. That the arrest of fecal masses at some point in the colon is present in almost all these cases is admitted, but what is the cause of such arrest and can that cause be removed is the practical question to be solved." . . . . "Now as this is a practical discussion I do not propose to put down here one single cause that I have not seen operative in my own experience. Of course there are others."

Prof. Tuttle then gave the following mechanical causes for membranous colitis: movable kidney, where the kidney slides up and down the posterior surface of the ascending colon for four to eight inches with every breath; chronic appendicitis, with adhesions. He believes the restricted peristalsis and arrest of fecal matter due to the adhesions is the cause of recurrent appendicitis with colitis.

Twenty-two operations resulted in nineteen recoveries from the colitis and the three failures proved rather than refuted the theory, as in these the adhesions were not confined to the appendix, but involved, more or less, the entire caput coli. Breaking up these adhesions relieved symptoms until adhesions returned.

Peritoneal adhesions in other parts of the abdomen causing restrictions of peristalsis were observed in twenty-five cases. Eighteen were due to adhesion of the sigmoid and were cured by lifting the organ up and suturing it so that acute flexure could not recur.

In two cases of colitis with exaggerated symptoms an interesting condition was found, viz, constrictions of sigmoid by the adhesion of two appendices epiploicæ situated on opposite sides of the gut.

Gallstones were found to be the cause of membranous colitis in two cases, and gastroenteroptosis in three cases.

Prof. Tuttle concludes, "With such experiences one can not wonder that I believe in organic causes for this condition."

Upon the urgent request of the president of the Academy, Dr. D. S. Funk, Professor Tuttle made a few remarks on local anesthesia in rectal diseases, which were received with much approval by the fellows of the Academy.

After the lecture, a collation was served.

C. R. PHILLIPS, Reporter.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

Annual meeting, held in Philadelphia, September 18, 19, and 20, 1906. The President, Dr. William Benton Snow of New York City in the chair.

(Continued from page 130.)

Locomotor Ataxia. Dr. Francis B. Bishop of Washington, D. C., described his technic in treating this disease. In the early second stage he had been able to give patients marked relief. In addition to treatment received at his office they were instructed to carry out a series of exercises at home laid down by Frankel.

Dr. F. H. Morse of Boston had seen cases of well marked locomotor ataxia greatly improved by the use of the negative continuous current to the spine, and by the general methods of improvement of nutrition.

Dr. J. D. Gibson of Denver thought the diagnosis of locomotor ataxia ought to be made before there is want of locomotion. He cited a case, seen by himself some time before, which had been diagnosed by many physicians to be neurasthenia.

The Uses of Static Electricity in the Treatment of Gastric Disorders. Dr. George D. Bond of Hillsboro, Texas, said that he had been able to get satisfactory results in the treatment of dyspeptic conditions from the use of a current which might be called a Leyden jar Morton wave. The connections are the same as in the Morton wave, except that the wire connecting the patient with the machine is attached to the outside of a large Leyden jar, the patient being seated upon the insulated platform. The general electrification, though not so evident as in the current taken from the prime conductor, has an increase of volume and potentiality. There is contraction and relaxation of the stomach with each charge and discharge, and, both in its entrance and exit, life and energy seem to be given to this organ. In the past three years Dr. Bond has treated thirty-five cases of stomach disorder by static electricity with gratifying results.

Dr. Fred H. Morse thought the general practitioner was confronted with no other diseased condition so frequently as those conditions complicated with dilatation of the stomach. He believed that in some of the various modalities of electricity there is a means of successfully treating many of the cases of chronic gastritis whether or not they were connected with dilatation.

Dr. Henry Finklepearl of Pittsburg has used both the high frequency and the Morton wave currents and obtains better results from the Morton wave current than from the glass vacuum electrode.

Dr. J. H. Mudgett of Philadelphia called attention to the fact that the Morton wave current has not only a massage effect but has an effect upon the organs which secrete the necessary juices for digestion.

Electricity in Joint Affections. Dr. Henry W. Frauenthal of New York City restricted the scope of his paper to the use of the electrical armament in the diagnosis and therapeutic treatment of affections in and about the joints. His own clinical experience was presented, with the work of other observers. In his results the *x*-ray has been of the greatest value in the determination of fractures extending into the joint, in subluxations, in malformations, in the presence of hypertrophic and atrophic bones at the point of articulation, in the various joint inflammations, and in conditions of the synovial sac and tendons of the joints. It was directed that an *x*-ray photograph of a joint should always be taken in two directions, the one at right angles to the other, and the distance of the tube specified. In tubercular arthritis it was claimed that by the *x*-ray the points of tubercular disintegration necrosis could be detected and the advisability of operative interference determined. A citation was given from the paper of Dr. John B. Murphy (*Journal of Advanced Therapeutics*, 1905) showing a great forward stride in the use of the *x*-ray in the treatment of tubercular joints. In three cases of tuberculosis of the spine Dr. Murphy had had the most gratifying results, and the paraplegia often accompanying the condition had been manifestly improved.

In the past five years Dr. Frauenthal has divided his cases of tubercular arthritis of the spine, hip, knee, etc., into two divisions, each of equal severity, with the patients of the same relative natural resistance. In those treated by the *x*-ray, high frequency and constant currents, the time of treatment was reduced one half, and pain was relieved almost immediately, while Nature's functions were stimulated into more rapid resolution. To these measures he has added in the past year the therapeutic measures of sunlight, diet (Biers), passive congestion, bodily exercise, mechanical protection of the joint, and psychical suggestion.

A quotation was made from Dr. Baynes (*Medical Electrology and Radiology*, April, 1904) upon phoresis in the local treatment of joint affections.

In consideration of gout and rheumatism Dr. Frauenthal described the special technic of the electrical treatment of the conditions. The increase of urea, uric and phosphoric acids found in the urine after a few days' application of the high frequency currents was found to be very marked. The author did not advocate the use of electricity to the exclusion of medical means, but believed it to be a valuable additional therapeutic measure. For the prompt relief of pain he considered it to have no rival.

Tubercular Antitoxin. Dr. J. D. Gibson of Denver claimed that in the treatment of tuberculosis in suitable cases there was produced by the *x*-ray an auto-specific or tuberculin toxemia arousing a reaction in the host to the liberated toxins which might be of great benefit to the patient. The cases best adapted to the *x*-ray were said to be those in which the germs were in sufficient quantity in the pleura, lungs, glands or elsewhere to cause by their destruction the toxin desired. The value as adjuncts to the *x*-ray of rest, diet, sunshine, fresh air, change of climate and medical agents was appreciated by the author. He pointed out the danger of exercise in high altitudes which many thought was necessary in obtaining fresh air. Skiagraphic prints illustrative of the points claimed in the paper were shown. A number of cases were reported, in nearly all of which climatic and medicinal treatment was unsuccessful until combined with the *x*-ray.

Dr. Martin L. Barshinger of York spoke of his highly satisfactory results with the high frequency current in pulmonary tuberculosis, and exhibited two patients. The good results were attributed to improved metabolism and pulmonary circulation.

Dr. Frederic DeKraft of New York had controlled the temperature in advanced tuberculosis by the *x*-ray, using a tube with considerable penetration at some distance from the body.

Dr. Gibson in closing emphasized the almost unnecessary use of the *x*-ray in incipient cases of tuberculosis. The fact of the greatest benefit being observed in the cases of extensive involvement was in marked contrast to the claims for other agents in the treatment of tuberculosis.

The Treatment of Lumbago and Other Painful Conditions of the Muscles of the Back. Dr. Thomas W. Brockbank of Philadelphia regarded this condition more in the light of a local manifestation of a general systemic toxemia than as a special and distinct disease with a pathology peculiar to itself. The chronic and acute types were described with the mode of onset. In treatment the spinous processes are carefully observed as to perfect allignment. In the treatment of lumbago the physico-therapist was said to have modalities ranging from the hot domestic sadiron to the static spark or the high power incandescent lamp. For the relief of pain the vibrator with ball attachment is used with at first light pressure and short strokes followed by deeper pressure and longer strokes as tolerance is acquired. A few long indirect sparks are then given on the static platform. With nervous patients the Morton wave current is used with a long electrode applied to the back. The importance of elimination through the bowels, kidneys, and skin was emphasized and a few cases reported in which the methods outlined had given satisfactory results.

Rhythm the Dominant Factor in Therapeutics and in the Organic World. Dr. Samuel S. Wallian of New York City in this paper said that the word "rhythmotherapy" was legitimately derived and comprehensively descriptive of a number of modern therapeutic expedients and of broad underlying principles which have hitherto been imperfectly and often inconsistently designated by other titles. Rhythm he said was the underlying law of the universe, and life itself an incessant succession of rhythmic reiteration, while health was the uninterrupted play of the organ without jar or undue friction. Were rhythm, the underlying principle dominating every manifestation of Nature, eliminated, the entire curriculum of science would have to be reconstructed. Vibration was defined as the voice of Nature, without which she would be a helpless mass of immaterial matter with no attributes of either cohesion or persistency. Physiology was said to be functional harmony; pathology, functional discord. Essentially, then, in the attempt to change pathologic into physiologic action there was the effort to establish lost rhythm in an arrhythmic organism. That overenthusiasts have failed with the *x*-ray, with high frequency currents, with static modalities, and with mechanical vibratory manipulations is not to be accepted as competent evidence against the intelligent employment of any of these rational measures. The enterprising practitioner, it was suggested, would study deeper into the nature, scope and possibilities of such potent resources of an art which is yet in the swaddling clothes stage of its ultimate growth.

The paper was discussed at some length by Dr. Morris Weil Brinkmann of New York. He is much interested in the subject and agreed largely with the author.

The Measurement of the Intensity of the Roentgen Ray an Element of Safety in Radiography and Uniformity in Therapeutics. Dr. Sinclair Tousey of New York City said that the quality of the *x*-ray could be determined by measuring the penetrating quality of the ray by the Walter skiameter depending upon the thickness of the platinum which its ray will penetrate. In the author's radiometer 1 to 10 thicknesses of tin foil weighing one ounce to 100 square inches are used. Both of these were said to be dependent not only upon the quality but also upon the intensity of the ray and the acuteness of vision of the observer. Other qualitative measurements were described. The author's method of quantitative measurement measures the intensity of the radiance by finding at what distance one can stand holding a fluoroscope to his eyes and see any trace of fluorescence when the current is turned on. If the radiance will carry 6 yards the intensity is said to be 6 Tousey. If one can stand at a distance of 12 yards the intensity is called 12 Tousey and in that case the duration of application should be only one quarter as long. An intensity of 6 Tousey with a penetration of 3 to 8 Benoit would permit an extreme duration of application (at one time or in a series occupying a month) of 34 minutes at a distance of 6 inches. The time might be increased if the intensity were less, or if the distance from the tube to the patient were increased.

Dr. William T. Bishop thought Dr. Tousey had brought the matter of measurement to an approximately practical demonstration.

Dr. Tousey in closing called attention to the necessity of keeping the screen covered with a sheet of glass over the fluorescent screen.

Electricity as a Factor in the Treatment of Certain Chronic Diseases of the Stomach. Dr. Otto Juettner of Cincinnati in this paper claimed that the practice of physio-therapeutic methods in the treatment of chronic ailments had established the superlative importance of the alimentary canal, more especially the stomach, in connection with the etiology and treatment. He believed the stomach occupies a much more commanding causative position than the text-books would indicate. He called attention to the anatomical position of the stomach and its share in the metabolic machinery as causative factors in disorders. Passing over the therapeutic indications he limited himself to a consideration of certain electrical modalities in the management of these cases. A primary induced current of moderate intensity he regards as useful as a muscular tonic to the relaxed and weakened walls of the stomach. With the intelligent coöperation of the patient, direct application may be made to the gastric mucosa. In many bad cases of gastric dilatation the results have been surprisingly good. It is understood that the hydro-electric applications are not to be used in cases of cancer, ulcer or acute inflammatory conditions of the stomach. The static modalities appeared to be of little service in the local treatment of the disorders, unless there were used currents of relatively high frequency, either in the form of the static induced or the static wave current.

The author emphasized the fact that in the treatment of stomach disorders it must be remembered that electricity alone is insufficient, even in the local management of the affected organ, and that the general treatment of the patient is of the utmost importance. Electricity should be combined with epigastric massage. The importance of diet was considered especially with reference to the weight and bulk of the food. He believed degenerative changes in the nervous system to be the result of primary etiologic conditions that are artificial products inasmuch as they could be removed in their early stages by strict attention to the functions of the organs of nutrition. He can not believe that Nature ever intended the existence of so-called idiopathic paralyses. In the treatment of the secondary effects of gastric affections the author has found the general application of high frequency currents to have a most salutary effect on metabolism and indirectly on the assimilative power of the stomach. He gives these applications once daily for ten or fifteen minutes. As an eliminative agent the incandescent electric light bath is given two or three times a week. The importance of attention to the bowel function was also emphasized.

(To be continued.)

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, October 4, 1906.
The President, Dr. Wilmer Krusen,
In the chair.

The Nonabsorbable Ligature in Pelvic Surgery, by Dr. Frank C. Hammond. The writer believes that it should no longer be considered a sound surgical practice to tie masses of tissue with heavy nonabsorbable silk, if catgut can be obtained. The ideal ligature should consist of material capable of keeping the tissues in contact, sufficiently strong to enable the tissues to proliferate and effect living union of the parts, and after this has been accomplished this material ought to become eliminated without disturbance of the parts; so that when the mission of the ligature has been accomplished, it should no longer remain in the tissue, a useless dead material capable of producing irritation, but should permit itself to be speedily absorbed.

Dr. E. E. Montgomery, in discussing, said that he is wholly in accord with the writer on this subject. He has been using both animal ligatures and sutures for a number of years, all buried sutures being chromic catgut. As has been said, where a sinus forms, it is likely to remain until the material which has caused it has disintegrated and is removed. Even after this has taken place, the sinus may remain because it communicates with the mucous membrane of the end of a tube and may remain for an indefinite period, or it may communicate with a small opening in the intestines and thus be the cause for a long continued sinus. Silk or material likely to remain for a long period of time is a source of trouble as long as it remains in the tissues of the body. The finer the silk, of course, the less danger there is. In some suppurative conditions it is impossible to remove all pyogenic material, and no matter how aseptic the operation may be, the silk suture is likely to be infected by the remaining pyogenic material.

Dr. F. H. Maier said that those who look back over our dispensary work of ten or twelve years ago are struck with the present condition of affairs in comparison with that time. We frequently saw cases apparently entirely successful as far as the operations were concerned that would return months or years afterward with abscesses or inflammatory masses of the broad ligament or sinuses, for which secondary operation was necessary.

Kocher in an article upon the ability of the peritoneum to take care of infection lays special stress upon the kind of ligature material used. He says that there are always a number of cases in which the microorganisms are present, or carried in by the hands, ligatures or instruments; furthermore, that the cells are ordinarily able to destroy all the microörganisms on the surface of the catgut and that in a very short time, due to the rapid absorption of the ligature, those in the interior as well, thus bringing about exemption from secondary infection; whereas, in the silk, on account of the slow process of disintegration, the microörganisms remain in the inner strands and act as a sort of culture medium. As a result the cells do not come into contact with them and a secondary infection may occur either in days or in years.

Dr. L. J. Hammond said that he does not believe we have yet found the ideal ligature; certainly, he has not been satisfied with the use of the catgut in the abdominal cavity. His feeling is a little contrary to that of Dr. Maier concerning the conditions that may arise should pyogenic conditions be present, his own feeling being that catgut forms one of the most fruitful culture media conceivable. As Dr. Montgomery says, if we have not removed all of the pus and pyogenic conditions, we have in all probability encouraged very rapid metamorphosis of possibly harmless germs by adding so fruitful a culture medium as animal suture. Dr. Hammond hesitates to use catgut in the presence of pyogenic conditions. He thinks the better way to use it is in the presence of inflammatory conditions alone. If pyogenic conditions are present it seems to him that should further suppurative processes develop, with an insoluble substance like fine silk, a sort of drain is furnished. Its presence as a foreign body might also produce sufficient irritation to be more quickly walled off. We know that in the peritoneal cavity Nature promptly undertakes the process of repair and anything like a foreign body is shut off from the general peritoneal cavity more quickly than soluble substances. For that reason in a nonabsorbable ligature, especially fine silk, we have a safer suture in the presence of pyogenic conditions than animal ligature. Another advantage is its greater security against slipping.

Dr. A. B. Baird said that he had used both silk and catgut in operations such as have been mentioned. Recently he has used more animal tissue than the silk. It seems to him that the results are better. He thinks there are some well founded objections against the catgut. It is a culture medium beyond doubt and presents this obstacle which has not been very satisfactorily overcome.

Dr. Barton Cooke Hirst thinks that the subject is one that must interest us all intensely. After serious thought on it and an experience embracing the time when nothing but silk was used by any one, he has twice changed his practice in regard to suture material. At first he used nothing but silk; then, nothing but catgut. In those days, however, means of sterilization were not perfect; he dropped catgut and went back to silk, using catgut only in the presence of actual inflammatory or infectious conditions. With the beginning of last year's work Dr. Hirst discarded silk entirely and now has no silk ligatures prepared for his abdominal sections. Except in suspension of the uterus and in intestinal work, for which Pagenstecker's thread is employed, he uses catgut exclusively. We are in a position to make catgut absolutely sterile now and also to preserve its strength. It answers his purpose and does not annoy him by breaking. He has never had an abdominal sinus from the use of catgut, which is more than can be said of silk.

Dr. H. D. Beyea agreed in part with what had been said regarding catgut as a suture material, but believes it has the disadvantage that, as compared with silk, its use greatly increases the danger of hemorrhage (the ties can never be as sure) and, because each surgeon employing catgut finds it necessary to make two ties or more on important blood vessels, a large amount of suture material is used, constricting a great area of tissue. He has always employed silk, and, aside from the reasons stated, because it has given him practically no trouble. In all of his experience he remembers scarcely an instance where the silk introduced became infected and came away or had to be removed. The silk is always small size, a No. 4 Tait silk. He sees cases where the silk ligature causes persistent fistula. Only to-day he operated upon such a case, the patient having the primary operation for an acute pelvic abscess in another hospital two years ago. A large silk loop was found at the uterine cornu. Repeated attempts to remove this ligature were made by fishing with the silkworm gut loop.

He has thought that the preparation of the silk has had much to do with our results. Our silk at the Gynecean Hospital is sterilized by the fractional method, and then at operation is allowed to soak for several minutes in a 1-500 mercuric chlorid solution.

Even in suppurative cases it has given no trouble worth mentioning. He can not now remember one case where the ligature came away. In puerperal or acute infection, where there is a high temperature and operation is carried out under these conditions, recognizing the trouble silk can give, he uses catgut. Otherwise, fine silk is always employed and certainly with complete satisfaction.

Dr. Charles P. Noble used silk in abdominal surgery for about ten years, so that there was ample opportunity for estimating its advantages and disadvantages, and because of the latter he abandoned it ten years ago. With the use of silk it is impossible to avoid the occurrence of sinuses when operating in a septic field; and, what is probably as bad or even worse, the occurrence of painful stumps due to infection lodged in a ligature. He quite agreed with Dr. Beyea that with care and intelligence the disadvantages of silk can be reduced to the minimum. Sinuses are much less apt to form with fine silk than with coarse silk. The risk is also minimized by making small pedicles instead of large ones. In the case of sinuses from the use of silk, Dr. Noble has never found it necessary to operate. He devised a little hook like a crochet hook with a long handle, and with this would fish for the ligature and withdraw it. If the ligature were too firmly imbedded to be drawn out at the first attempt, it would be repeated from time to time until it was removed.

For the past ten years he has used catgut exclusively and has had no trouble with it, and has no reason to make a change. The catgut is sterilized by the cumol method. When it is desired that the sutures shall not be absorbed for from four to six weeks, the catgut is first chromicized and then sterilized by the cumol method.

Dr. Brooke M. Anspach said that at the University Hospital formaldehyd-cumol catgut is used. The gut is soaked in ten per cent. formaldehyd solution for twenty-four hours, washed and dried, and then cumolized in the usual way. At first they stored the rings of catgut in heavy glass tubes, but they have recently adopted the plan of the manufacturers of storing them in a double envelope. The catgut is placed in the envelope before being cumolized and the entire package is subjected to the cumol process. At the time of the operation the nurse tears off the outer envelope and the inner envelope is removed by an assistant. It is an easy and safe method and in operations outside of the hospital the gut can be easily carried without the danger of contamination.

Dr. Frank C. Hammond, in closing, said that in reading the literature upon the use of nonabsorbable ligatures he finds that the tendency is for the general surgeon to use nonabsorbable ligatures, while the greater portion of gynecologists use absorbable material. Two of these three cases reported were operated upon in a hospital where the general surgeon does the gynecological work. The third case was operated upon in a hospital with which a gynecologist is connected, and had the gynecologist been there, silk would not have been used.

Dr. L. J. Hammond spoke of silk acting as a drain, it does in some cases in the shape of a sinus; this is a drainage which we do not desire.

Relaxation and Atony of the Nonpuerperal Uterus Incident to Dilatation and Curetment. Dr. F. H. Maier described the process of relaxation of the uterus with the coincident enlargement of the cavity that usually takes place during dilatation and curetment. He also quoted a number of cases of complete loss of tone (atony) in nonpuerperal uteri during the performance of this operation; and pointed out the increased danger of perforation at this time when the organ is nothing more than a thin-walled, flaccid sac, whose walls offer no resistance to the impinging instrument. Mention was also made of the injustice that may be done to the patient when this condition, atony, is mistaken for a perforation, if the physician leaves unfinished an operation begun for the relief of a definite train of symptoms. The article gave a description of VanTussenbrock's interpretation of the phenomena. The author, although in full accord with Kossman, Schaeffer and Van Tussenbrock as to the possibility of the occurrence of atony in nonpuerperal uterus, is inclined to think that it only takes place where there is some pathological condition of the walls present.

Dr. Charles P. Noble said that the subject is interesting and an entirely new one to him. All are familiar with the fact that the pregnant uterus can relax, but whether this is true in the nonpuerperal uterus is a novel proposition. If it is true, it is important, and the society is under obligations to Dr. Maier for having brought the subject before it. Twenty years ago, when the uterine sound was used as a routine in diagnosis, occasionally it would pass up four, five, or six inches within the external os. It was the custom of physicians at that time to explain this accident by stating that the sound had opened the Fallopian tube. Later all agreed that it had perforated the uterine wall. It has happened in Dr. Noble's practice a number of times that the curet has passed through the external os four, five, or six inches, and it has been his opinion that the uterus was perforated. It is possible that this explanation is not always correct, and he will be interested to investigate the subject anew. Recently he was cureting the uterus in an old woman as a part of a prolapse operation. The curet entered so deeply that he was satisfied it had penetrated the uterus. Having occasion to open the abdomen to perform a hysterorrhaphy, he looked in vain for any evidence of a perforation; neither a rent nor any bloody fluid could be found. He was unable to explain the fact, unless the curet had perforated the lateral wall of the uterus and had passed into the broad ligament. Perhaps this was an instance to be explained by relaxation of the uterus.

Dr. John M. Fisher said that he is in the habit of dilating the uterus with bougies and must confess to having perforated the uterus several times and having verified the diagnosis by abdominal section. He recalled a case seen in the Jefferson Hospital during the winter in which he dilated with bougies and subsequently used the curet, and in which he felt that the curet had entered the uterus at a greater depth than he thought it should. He opened the abdomen for exploratory purposes but did not find the uterus perforated and thought, therefore, that it must have been a case of relaxed uterus incident to the curetment. It is the only case of the kind that he recalled. He remembered a case which he dilated in Kensington a few years ago, in which the bougie slipped into the uterus much farther than he thought it should. The woman made a good recovery, and about a year subsequently he was again called to see her for some disease of the endometrium. He took two students with him and told them of his previous experience and pointed out the necessity of great care. After introducing several bougies one slipped in a good distance. He did not know whether or not the organ was perforated; the explanation given by Dr. Maier may have accounted for this. The uterus was packed with gauze and the woman made a good recovery.

Dr. Stephen E. Tracy said that two or three years ago he looked up the question of cureting the uterus and several cases were mentioned in the literature in which the instrument during the performance of the operation, passed to a much greater depth than the cavity of the uterus measured. In many cases the abdomens were opened and no perforations were found. Some of the writers explained the circumstance by the statement that the curet had passed into the Fallopian tube. He thinks explanation given by Dr. Maier would probably be a better one.

Dr. E. E. Montgomery thinks the society is much indebted to Dr. Maier for having brought this subject to its attention. It never occurred to him that such relaxation did take place, yet he has no doubt that this affords an explanation of several cases in which he has dilated the uterus and found the bougie or curet passed to a greater depth than was apparently justifiable, and subsequently, when, prior to the apparent rupture, the abdomen was opened as planned, no perforation was found. The explanation given by Dr. Maier seems a reasonable one.

Dr. Wilmer Krusen said that when Dr. Maier began reading his paper he was reminded of a case brought into the Samaritan Hospital recently in which the physician in cureting the uterus had passed the uterus through the fundus. When the patient entered the hospital there was a hole in the fundus large enough to admit the thumb. He did a supravaginal hysterectomy rather than run the risk of infection from the uterine mucosa. As Dr. Maier continued his paper it had occured to Dr. Krusen that he had had cases in which apparently the uterus was perforated, but in which when the abdomen was opened no perforation could be found. Whether it was perforated as far as the peritoneum and not through the abdominal coat he was unable to say.

He asked Dr. Maier how long after the curetage does this relaxation last; or whether there is a speedy contraction to the normal.

Dr. Maier, in closing said he felt greatly obliged to the members of the society for the interest they had manifested in this subject. It is one that has appealed to him both from a scientific as well as a clinical point of view. When his attention was first called to this phenomenon it cleared up a number of instances in which his curet had slipped into the cavity to unusual depths and yet in which he felt positive that perforations had not taken place. Like the other gentlemen who had spoken, he too, was able to verify the absence of all signs of injuries to the uterus by subsequent laparotomies.

Clinical History. Dr. E. E. Montgomery read the clinical history of the case of a woman 44 years of age who came under his observation on the 18th of June last. She had had three children, the youngest 20 months and had recognized an abdominal tumor for 13 years, and recently had complained of severe pain in the abdomen. All her labors were instrumental. Menses were regular, lasting four to five days; she had no leukorrhea, bowels were constipated. A hard mass was felt in the right side of the umbilicus, which is not, however, connected with the uterus, as a distinct tympanitic note can be distinguished between it and the pelvis. The tumor is slightly movable, irregular, nodular, and was diagnosed to be an aberrant myoma. She underwent operation on June 20 at St. Joseph's Hospital. Incision was made in the median line, the mass turned out was found to be situated in the right broad ligament, enveloped in the omentum and mesentery, with some vesical attachments. The omentum was stripped away from it, the broad ligament clamped and the mass, including the ovary, removed. It was found to be an ectopic gestation sac. The broad ligament was ligated with catgut, as was also the omentum. The peritoneal surface over the bladder was sutured together, covering over the raw surface. The woman's recovery was uninterrupted. In no class of cases are the subjective symptoms more important than in the diagnosis of extrauterine pregnancy. In obtaining the history of this patient he failed to elicit any history that would lead him to infer that the tumor was the result of a pregnancy, and possibly the responsibility of this failure was as much his as it was of the patient. While it is true that a gestation sac may remain for a long time in the abdominal cavity without giving rise to any special symptoms it is always a source of danger, as it may readily be subjected to injury which will be sufficient to set up an irritative process and the close proximity to the bowel affords an opportunity for the entrance of infective germs. In this patient, although the tumor had been carried for 13 years, it had only been in the last few months that inflammatory symptoms had developed and the adhesions had taken place to the omentum. Prior to that the sac was apparently a tubal sac, free from adhesions.

Lipoma of the Uterus. Dr. A. G. Ellis briefly described eleven previously reported cases which include 4 of lipoma, 2 of lipomyoma, 4 of lipofibromyoma and one classified simply as adipose tissue. Three others should possibly be included but are rejected by Seydel because the diagnosis had not been confirmed by microscopic examination. He exhibited a specimen found at autopsy upon a woman of 60 who died from cerebral apoplexy. The tumor was a pure lipoma, 6.5 by 8 cm. in size, interstitial in location, occupying the fundus and anterior wall of the uterus. A band of fibrous or fibro-fatty tissue bore the relation of a capsule to the tumor but was readily separated from both it and the uterine tissue. Microscopically the tumor is a typic lipoma. As the uterus normally contains no adipose tissue, an interesting point is the origin of fatty tumors of that organ. Several theories have been advanced but none has been demonstrated as correct. The two receiving the most support are: (1) That lipomas arise from metaplasia of muscle or connective tissue cells, and (2) that they are due to hyperplasia of embryonally displaced adipose tissue.

Transactions of the Allegheny County Medical Society.

THE INFLUENCE OF CHEMICAL PRESERVATIVES ON NUTRITION AND HEALTH.

BY W. D. BIGELOW, M. D.,
Chief of Division of Foods, U. S. Department of Agriculture, Washington, D. C.

(Address delivered before the Allegheny County Medical Society, November 20, 1906.)

During the last generation the methods for the preservation of foods have undergone a great change. The introduction of cold storage, the extension of the use of household refrigerators, the large increase in the use of processes for the preservation of foods of various types by sterilization in hermetically sealed packages, and finally, the changes that have been wrought in the methods of drying fruit and vegetables have all had their effect. These influences combined have resulted in a marked change in our daily menu during the winter months, and have made it possible for the inhabitants of one country or climate to employ regularly the products of another. This result has been especially important to people of moderate circumstances, affording a varied diet to those whose menu would be, otherwise, of a restricted nature, especially during the winter months.

The chief effort of the manufacture of food products in the last thirty years has been the preservation of foods in a state as closely resembling the fresh article as possible, and in such a manner that its transportation is practicable. This tendency received a marked impetus in 1874 by the perfection of Kolbe's method of manufacturing salicylic acid, which greatly cheapened that product and led to vigorous efforts to extend its use. During the next few years, and before the physiological action of salicylic acid was at all understood, a number of prominent chemists warmly advocated it as a food preservative. It gained in favor and its use increased rapidly until 1880. In that year it was claimed by the industries interested that 110,000 pounds were used in France for the preservation of foods.

Immediately following the extended use of salicylic acid as a food preservative, a study was made of other substances that might be used for the same purpose. Boric acid and benzoic acid were very soon suggested, and other preservatives that have been frequently used since that time soon began to be employed. Fluorids were developed as a preservative at a somewhat later date, and the use of formaldehyd only began about fifteen years ago.

Until about 1880 the literature regarding the use of chemical preservatives was largely contributed by those who were directly interested in extending the sale of those substances. About that time, however, the advisability of adding such substances generally to foods began to be questioned, and, from that date to this, articles for and against the use of the various chemical preservatives have frequently appeared.

The influence on the digestive ferments of the various preservatives has repeatedly been studied by artificial digestion experiments conducted in glass. Experiments on small animals have frequently been conducted. In a few cases we find reports of experiments with men as subjects. The difficulty attending an investigation of this nature, the number of individuals that must be employed in order to obtain data that may be regarded as reliable, the number of workers necessary to conduct an experiment on an adequate scale, the expense attending such a study, have all contributed to delay the thorough and complete investigation that was so long needed.

The work which I am about to describe was initiated and directed by Dr. H. W. Wiley, chief of the Bureau of Chemistry. My connection with the investigation is as his collaborator, giving special attention to the analytical work and the metabolism experiments. The work was begun in December, 1902, and is still in progress. At the time this investigation was begun, only one preservative had been studied in a careful and complete manner. The Imperial Board of Health of Germany had made a careful study of the influence of borax and boric acid upon the nutrition and health of human subjects. This work was done in 1901, and the results were clear and distinct. The number of subjects employed for the investigation was, however, not sufficient to clearly establish the fact that the results obtained would warrant any general conclusions.

In the experiment conducted by the Bureau of Chemistry twelve men were employed as subjects. These men were selected from a large number of volunteers. Each applicant was required to fill in the following blank, describing the usual conduct of his life:—

DESCRIPTIVE BLANK TO BE FILLED OUT BY APPLICANTS FOR HYGIENIC TABLE.

1. Name and address.
2. Date of birth.
3. Have you had any sickness confining you to your room within a year? If so, state nature and duration.
4. Are you subject to indigestion? If so, state character and frequency.
5. Do you use coffee, tea, or chocolate with your meals? If so, state at which meals and which beverage you prefer.
6. Do you use tobacco? If so, state in what form, at what times, and quantity.
7. Do you use wine, beer, or other alcoholic beverages?
8. Do you go to stool regularly? At what hours?
9. At what hours do you usually urinate?
10. At what hours do you go to bed? How many hours do you usually sleep?
11. Do you engage in any unusual or violent exercise? If so, what?

It was desired to make this study as simple as possible, and to avoid complicating it by the influence of alcohol. Owing to the fact that the alcoholic habit is a strong one, and the difficulty of refraining from its use would often be very great, applicants addicted to the use of alcoholic beverages were not admitted. Applicants addicted to the moderate use of tobacco (in the form of smoking) were accepted on condition that the amount of tobacco employed and the times of employing it be uniform.

All candidates who were selected signed the following pledge:—

I hereby agree, on my honor, to follow implicitly the rules and regulations governing the hygienic table of the Bureau of Chemistry during the time that I am a member thereof. I agree, during my attendance at the table of observation, to use no other food nor drink than that which is provided for me, with the exception of water, and that any water not used at the table will be measured and reported daily as a part of the ration. I further agree that I will continue to be a member of the hygienic table for a period of at least six months, from December 1, 1902, unless prevented by some illness, accident, or unavoidable absence. I agree to continue the regular habits of my life, to indulge in no unusual excess of labor or exercise, and if tobacco be used it shall be used at such times and in such amounts as will be agreed upon between myself and the chief of the Bureau of Chemistry.

I further agree that I will not hold the Department of Agriculture, nor any person connected therewith, responsible for any illness or accident that may occur during my connection with the hygienic table.

It was believed that in order to obtain the best results from an experiment of this nature, the subjects should be in as normal a condition as possible, and that this could only be attained by men who were following their usual vocations, and who did not have the feeling of restraint. It was evidently necessary either to place the men under restriction and under constant watch, or to place them on their honor. It was believed that the feeling of unrest that would attend a period of several weeks of restricted life would militate against the reliabilty of the results. The method of depending upon the honor of the subjects was therefore chosen as the most satisfactory and the safest.

At the close of the experiment each member of the table subscribed to the following certificate regarding his conduct while the experiment was in progress:—

I hereby certify on my honor that, during the period beginning .... and ending ...., I have not partaken of any food or drink (except water reported) other than that furnished at the hygienic table of the Bureau of Chemistry, and that I have accurately recorded all the items of food and drink received at the table.

I further certify that I have not engaged in any excessive or unusual physical exercise; that I have followed, in so far as possible, the regular tenor of my daily life in respect to work, exercise, and sleep; that I have observed to the best of my ability and recorded accurately the data relating to weight, temperature and pulse; and that I have observed faithfully all the regulations connected with the experimental work at the hygienic table.

It was not necessary, however, to depend entirely on this certificate and our knowledge of the reliability of the subjects for information regarding their fidelity to their trust. As I shall explain hereafter the food and excreta of each man were carefully analyzed, the determination of total solids, nitrogen, sulphur, phosphorus and mineral constituents being made. In this manner the total income and outgo of each subject was determined as completely as possible, and a marked variation of any one from his obligations would have been apparent.

It was deemed necessary in a study of this nature to continue the administration of the preservative for a considerable time, and great care was exercised in selecting a menu which would be sufficiently uniform to admit of the necessary calculations regarding metabolism and at the same time be sufficiently varied to appeal to the appetite of the men and keep them in good condition. The meats selected were roast beef, beefsteak, lamb, veal, pork, chicken and turkey. Fish, oysters and eggs were also used. The butter was of the best quality that could be obtained. Milk and cream were obtained from dairies carefully inspected by the authorities of the District of Columbia, and personally visited by the chief of the Bureau of Chemistry. Fresh fruit and vegetables were employed when practicable, and at other times the best grades of canned goods were used. In order to secure uniformity in composition a liberal supply of fruits was included. The desserts employed were usually custards, rice pudding, ice cream, and products of a similar nature that readily admitted of being mixed and sampled. The bill of fare was varied daily, but recurred regularly in seven day periods. By this means a monotony of food was avoided as far as possible, and at the same time the work was simplified by the recurrent use of established rations.

The food employed was carefully inspected with respect to quality and purity. In the preparation of the food the possibility of sampling was always necessarily considered. For instance, baked potatoes were eliminated from the menu. It was believed that the lack of uniformity in removing them from the skins made the securing of a representative sample for analysis difficult. It is impracticable in this case to deduct the weight of the skins because the potato adhering to them is dryer and thus its composition is not comparable with the portion eaten. It was necessary to serve all meats and fish without dressing and permit the sauce or gravy to be added at the table as each must be weighed (or measured) and analyzed separately.

Notwithstanding these features, the food was decidedly superior to that which the men would have received in boarding-house life.

Two rooms in the basement of the Bureau of Chemistry were equipped as kitchen and dining room. Because of erroneous statements that have been made and widely circulated by paid agents of certain interests connected with the manfacture and sale of chemical preservatives, I shall ask your indulgence for a brief description of these rooms. One was given up entirely to use as a kitchen. It was equipped with two gas ranges, a large well appointed refrigerator, sink, table, requisite cupboards, and in fact all customary facilities. This room was well ventilated, though it is only fair to say that the ventilation was accidental as the room was not originally designed as a kitchen.

On the opposite side of the room from the two windows was a large dumb-waiter shaft extending to the top of the building by the side of a large ventilating flue and near a cupola whose windows were fixed on pivots to permit of their being opened as much as the weather would permit. The kitchen opened into a wide hall in which a stairway leads to the top floor directly below the cupola just mentioned. At the side of the stairway on each floor is an opening three feet wide. Through this shaft and stairway a strong draft passes constantly. In the hall just mentioned the laboratory supplies are received and unpacked. Along one side is a cupboard in which a portion of the stock of unopened bottles of reagents is stored. No other chemicals are kept there.

On one side of this hall, about twenty feet from the kitchen door, is the door leading into the dining room. This room was supplied with two extension tables and the linen, china, etc., were of good quality and were clean, neat and attractive. Except at meal time the room was also used for certain physical tests. The apparatus employed was permanently stationed at the sides of the room and of course was always in sight. This apparatus has no place in the equipment of a dining room, but was not sufficient in amount to give the room the appearance of a laboratory when the tables were set. The room opposite the dining room is stocked with presses, mills, lathes, etc. and is used in the preparation of samples.

What I wish particularly to emphasize is that there were no chemical operations conducted on the floor on which the kitchen and dining room were located, that the light and ventilation were good, that the odors from the kitchen could not possibly reach the dining room, and that they were not surrounded by unusual odors nor subjected to objectionable conditions.

The mental attitude of the subjects was not one of fear and uncertainty. It was characterized by the hearty buoyancy of young men under normal conditions.

During the entire period the subjects were kept under competent medical supervision. Assistant Surgeon-General H. D. Geddings of the Public Health and Marine Hospital Service attended to the medical work in the experiment with boric acid. With the other preservatives Dr. Wiley gave the matter his personal attention. In addition to the data secured by the attending physician in his personal examination of the subjects, a daily record was kept of the temperature, pulse beat, and net body weight of each individual. In addition to the metabolism experiments that are described later, a careful examination, chemical and microscopical, was made of the urine, and from time to time the blood was examined.

Each experiment was divided into three periods—a fore period, preservative period, and after period. Preliminary to the fore period the amount of food consumed by each individual was weighed and the amount required under normal conditions was determined as accurately as possible. During the fore period only normal food, without any preservative whatever, was consumed by the subjects. The amount of each particular food given to each subject was accurately weighed by a chemist, and each food was subject to a careful analysis. The weight was taken and a similar examination made of the feces and urine excreted by each individual. By this means, the income and outgo of sulphur, phosphorus, fat, and inorganic material were determined.

At the end of the fore period, which varied in length from seven to ten days, the administration of the preservative began. In all other respects the preservative period was identical with the fore period, and by comparing the data obtained in the two periods the influence of the preservative on the elimination of the various elements and complexes mentioned was determined. The after period was identical in all respects with the fore period.

During the after period the preservative was slowly eliminated from the body and the functions returned to their normal state. It will thus be seen that the data gathered in this study depended on, first, the usual medical examination, including temperature, pulse beat, and weight; second, the clinical examination of the urine and blood; third, a careful metabolism experiment.

BORAX AND BORIC ACID.

The amount of boric acid administered during the first four days of each preservative period was one half gram (7.5 grains) daily. Every four days the amount was augmented by a half gram daily, until the limit of toleration was attained. It was found that almost all the subjects suffered from a severe headache within ten or twelve days after the administration of the preservative began and frequently much earlier. In no case did any subject receive as much as three grams daily before the headache began. Four grams were found to be the limit of toleration even for as much as one or two doses, and it was found that a much smaller amount could not be taken continuously.

When the limit of toleration was established, it was decided to conduct an experiment for a considerable length of time, limiting the amount of the preservative to that which might be obtained in the regular food supply if the use of the preservative were freely permitted. This amount was fixed at a half gram (7.5 grains) per day. The amount so fixed was the amount which it is believed a considerable portion of the population would receive daily in butter alone if the preservative were widely used, not taking into consideration those foods with which borax is employed, but which are not a constant and regular portion of the diet. It is estimated that during a considerable portion of the year the amount of butter consumed (employed in cooking or otherwise) by the average adult in good circumstances is about one hundred grams or three and a third ounces daily. Manufacturers who desire to employ this preservative wish the limit placed at one half of one per cent. If our butter were ordinarily preserved with boric acid, as has been claimed by many dairymen to be desirable, a large portion of our adult population would therefore be consuming a half gram of boric acid from that source alone, and a considerable portion in addition in such foods as dried fish, and salted and cured meat. It will therefore be seen that the amount of boric acid administered in this experiment was not excessive.

During the first experiment conducted with boric acid it was administered with the butter. The mental attitude of the subjects during this experiment was a matter of considerable interest. They had no means of knowing the food in which the preservative was administered, and one food after another was suspected. After a time an antipathy developed for the food supposed to contain boric acid. A portion of the subjects believed it to be in the butter, and showed an evident desire to eliminate that food from their diet. Others supposed it was in the milk and lost their fondness for milk. Others believed that meat contained the preservative, and their meat was eaten in a perfunctory manner. The mental attitude of the subjects towards the food supposed to conceal the preservative was marked, although every effort was made to overcome it.

At the beginning of the second experiment it became evident to the class in some way that the preservative was adminstered in the butter. It was then changed from one food to another, but sooner or later its medium was discovered, until finally at the unanimous request of the subjects, the administration of the preservative mixed with food was stopped, and thereafter it was given in capsules. This form of administration was adopted reluctantly, and only after we had become convinced that the results to be obtained by it were more normal than could be obtained by mixing the preservative with the food.

It was attempted as far as possible to keep the subjects from knowing when the administration of the preservative began and when it ceased, but this was possible only to a limited extent even before they knew the particular food in which it was administered. The subjects knew, for instance, that the fore period would be no longer than was necessary. They often knew approximately when the preservative would cease and the approximate length of the after period, so that they were able to tell within two or three days, or at least within a week, of the beginning and end of each preservative period.

The results of the administration of the long continued exhibition of boric acid, even in small doses, show an evident tendency to diminish the appetite, to produce a feeling of ''fullness in the head,'' as it was usually characterized by the subjects, and discomfort in the stomach. In many cases marked nausea developed. The prolonged administration of boric acid or borax led to a well defined and persistent headache. A small but regular depression in weight followed the administration of the preservative. When a larger quantity was employed these symptoms became much more marked. In many cases the subjects became ill and entirely unfit for duty. In a number of cases marked results attended the administration of two grams and frequently of one gram of boric acid daily.

The administration of the preservative was marked by a tendency to decrease the excretion of nitrogen, and the elimination of nitrogen was not immediately restored to the normal, after the withdrawal of the preservative. One important fact developed in the clinical examination of the urine is directly connected with the suppression of nitrogen which has just been mentioned. There is evidently a marked tendency toward the formation of albumin in the urine during the preservative period. Those subjects which were affected with a slight degree of albuminuria showed an increase in the albumin to a considerable extent, while other subjects, who during the fore period were free from albuminuria. developed albumin in the urine in appreciable quantity during the preservative period.

When we consider, therefore, the evident suppression of nitrogen, the increase in albumin, in connection with the marked and well defined headache, the possible effect of the tendency of the administration of boric acid, even in small amount, is a matter that should be considered very gravely. In spite of the tendency on the part of the preservative to decrease the elimination of nitrogen, there appears to be a distinct tendency to increase the quantity of phosphoric acid excreted.

SALICYLIC ACID.

Perhaps the strongest objection that was offered to the results obtained from the ex-experiment on boric acid, which I have just described, is that the subjects knew approximately when the boric acid was administered and that there was a possibility, or even a probability, that their appetite, their relish for the food, and perhaps other conditions were influenced to a considerable extent by this knowledge. This objection was realized at the time the experiment was conducted, and in the publication of the results attention was called to it.

We were somewhat surprised, therefore, to find the objection largely answered in our experiment with salicylic acid. There we expected to encounter the same prejudice, and perhaps a greater prejudice, because the general feeling against the use of salicylic acid was somewhat stronger than in the case of boric acid. The subjects who underwent the experiment with salicylic acid were only in a few instances the same as in the boric acid work, but the same number of men were employed and the same mental attitude might readily be expected. It was a matter of surprise, therefore, to find that, very soon after the administration of the salicylic acid began, the appetites of the men markedly increased. Hunger was evidently stimulated by the administration of the preservative. It is apparent, therefore, that the objection of the influence of mental attitude that was raised against the results with boric acid was not applicable to the experiment with salicylic acid, and the fact that it is not, minimizes the influence of this factor in the experiment with boric acid.

During the experiment with salicylic acid the health of the men on the whole remained good. Hunger was markedly stimulated, as I have just stated, and consequently the appetites of all the subjects remained good throughout the experiment. The administration of salicylic acid continued for thirty days and was divided into sub-periods of five days each. The amount of salicylic acid administered daily for the various sub-periods of five days each was 0.21 gram (3.24 grains), 0.42 gram (6.48 grains), 0.74 gram (11.42 grains), 1.2 grams (18.52 grains), 1.6 grams (24.69 grains), and 2 grams (30.86 grains), making a total during the entire 30 days of 30.85 grams (476 grains).

The experiment was not marked by such evident manifestations as attended the administration of boric acid. The elimination of nitrogen was not materially influenced by the administration of the preservative, although the amount eliminated in the feces was decreased, and the amount eliminated in the urine correspondingly increased, showing an increase in the metabolism of the nitrogenous compounds. The elimination of phosphorus in the urine was not materially influenced by the administration of the preservative, although its elimination in the feces was markedly decreased. The preservative appeared, therefore, to interfere with the metabolization of phosphorus, and to have a tendency toward the accumulation of phosphorus in the body.

Contrary to our expectations, and to the usual belief, we found that the elimination of uric acid was decreased by the administration of salicylic acid. Considering the fact that the men appeared to be in very good physical condition, and were under uniform conditions as far as possible, and especially considering the fact that their appetite increased and was abnormally great, it is a matter of surprise to note that the average weight of the subjects decreased. This suggests that salicylic acid is a stimulant at the beginning and later a depressant. It suggests the possibility that the preservative stimulates the cells to unusual action, but tends, notwithstanding that fact, to break down the tissues more rapidly than they are built up.

The microscopical examination of the urine showed a considerable increase in microscopic bodies. This, of course, was not confined to one variety of bodies, but seemed to be fairly well distributed among the various crystals and cells that were identified. Considering the fact that a large portion of the salicylic acid passes through the system unchanged, and the remainder is not materially changed, it would appear that the administration of this substance places an extra burden upon the kidneys and the increase noted in microscopic bodies may be an indication of that fact.

In concluding, then, we may say that while the effects of salicylic acid were not so pronounced as in the case of boric acid, they are sufficiently pronounced to indicate that this substance may properly be regarded as a drug which should only be administered under medical supervision.

(Since part of Dr. Bigelow's paper contains matter which has not yet been published by the Department of Agriculture, the section of the paper giving the results and conclusions relating to benzoic acid, formaldehyd, sulphurous acid and copper sulphate has been omitted.)

It is believed that it has been demonstrated by the experiments I have described that the substances we have been discussing interfere with digestion and are detrimental to health. It is believed that these substances are drugs in the ordinary acceptation of the term, that they should not be added to foods, and that their consumption should be limited to the ordinary use of drugs under the direction of a physician.

The argument most commonly made in favor of employing preservatives is that the quantities in which they are used are so small as to be comparatively insignificant. It is claimed that in these quantities they are not detrimental to health.

If these substances in the amounts in which we have considered them appreciably affect the digestion and health of strong young men, how shall we fix the amount which can be taken with safety by those whose condition makes them more susceptible? We can determine with some degree of satisfaction the amount of a drug which will derange the functions of the average adult within a definite short time, but how shall we determine what the effect of any amount will be in a year, or in a period of years, or a number of generations?

We have not considered, nor have we been able to consider, the question of idiosyncrasy as applied to these products. We only know that personal idiosyncrasy is applicable here; that the toxic dose with some individuals is very much lower than with the average individual.

The argument is repeatedly made that these substances have been added to foods for nearly forty years, and that no injurious effect has ever been known in any case to have resulted from their use. This statement, however, is untrue. There have been repeated cases of illness that have been caused by the consumption of food that is artificially preserved. It is said that in these cases the preservative was added carelessly, sometimes that it was added repeatedly, but it is hardly a safe principle to permit the class of employees ordinarily found in food manufacturing plants to handle a product in which even a notable variation of the amount employed may have a prejudicial effect upon the health of the consumer.

The laws of almost all the states forbid the practice of medicine by one who has not completed a course of study in a reputable institution and passed a rigid examination. They forbid the compounding of prescriptions by one who has not had corresponding qualifications. A physician's prescription for a preparation containing boric acid or salicylic acid can only be filled by a qualified pharmacist. It has been found necessary to safeguard the public health by such regulations as these. Is it not equally necessary to forbid untrained laborers to dispense potent drugs in our foods?

There may be industries in which it would be unwise to at once forbid the use of chemical preservatives. There may be classes of food whose manufacture is not practicable without their use. In such cases judgment and discrimination should be used, but our effort should be to remove from the food supply, at as early a date as possible, products that are distinctly injurious to health.

DISCUSSION.

Dr. Adolph Koenig praised this work which was done by the United States Department of Agriculture, saying it was by far the best work in this line which had been done anywhere. He likened the question of food preservation to the recent progress in surgery, where *antisepsis* has been replaced by *asepsis*. He wonders how many of the cases of indigestion we treat are but cases of slow poisoning. Personally, he thought a plain statement of the preservatives used in any article would be sufficient.

Dr. Aschman, chemist of the Pennsylvania Department of Agriculture, spoke of the unjust and incorrect criticism which interested parties had caused to be made on this work. Speaking of value of food inspection, he said he had found three different preservatives (boric, salicylic and benzoic acids) in *one* sample of oysters, and referred to the queer arguments the users of these deleterious preservatives bring forward. Pittsburg with its municipal laboratory has much purer milk than Allegheny with its milk inspector.

Dr. Diller said he would like to question his grocer and milkman just now. He praised the work reported in this paper and asked how far the present laws cover the use of such preservatives.

Dr. J. F. Edwards spoke of the importance of this work and of the fact that interested parties had argued that the use of formaldehyd in milk does no harm—a claim based on certain experiments which were very meager and inconclusive, while these present experiments are as thorough as we could ask. Formerly formaldehyd was much used in milk in Pittsburg, but in the last six or eight months the authorities have stopped this practice of the merchants.

Dr. Dranga said that we should stand by the authorities in this matter both as physicians and as citizens. With over one thousand retail milk dealers, the present three milk inspectors have their hands full. She gave some examples of the bad effects of formaldehyd milk on babies.

Dr. Hoffman facetiously said that he often wondered what the results would be if the government were to investigate the use of *drugs* by physicians.

Dr. Bigelow, in closing, said in answer to a question that the pulse was taken *t. i. d.* and the temperature daily in these experiments, but only in one "squad" was a change noted, and that was when the temperature was lowered during the adminstration of formaldehyd. He mentioned the former experiments with formaldehyd on *one calf* and "in glass." He is conservative in the matter of food adulteration and thinks the users of food preservatives as business men and as citizens are not willfully doing wrong. He said the use of formaldehyd in milk is *criminal*. The government regulations for the use of coloring matters are not yet published.

The Society unanimously thanked Dr. Bigelow and the Department of Agriculture for this paper and this work.

Reports of County Societies.

BLAIR—NOVEMBER.

The Blair County Medical Society held its regular monthly meeting in the common council chamber, November 26, and it was one of the best attended ever held by the organization.

Dr. Francis P. Ball of Lock Haven, was introduced to the assembly. He was the guest of the society and delivered a timely and instructive address on the subject of

"Ectopic Pregnancy." A general discussion on the subject was participated in by Drs. W. A. Nason, Howell, Blose, Fetter, Bloomhardt and also by Dr. Ball. A vote of thanks was then tendered Dr. Ball for his very able and instructive discourse.

Three new members were taken into the society, Drs. Delaney and Miller, resident physicians at the hospital, and Dr. Neal of the Blair County home.

The following officers were elected for the ensuing term: President, Dr. W. A. Nason, Roaring Spring; vice-presidents, Drs. T. M. Morrow and H. L. Hartzell, Altoona; secretary, Dr. J. D. Hogue, Altoona; treasurer, Dr. W. S. Ross, Altoona; reporter and corresponding secretary, Dr. Frank A. Ford, Altoona.

The meeting then adjourned.

The annual banquet of the Blair County Medical Society held in the evening at the Colonial Hotel was one of the most elaborate ever enjoyed by the society. There were covers laid for forty persons, the tables being arranged in an artistic manner. The menu served was discussed with a relish.

Vallades' orchestra rendered a delightful musical program during the feasting and tended to enliven the occasion and at its conclusion Dr. W. S. Ross assumed the office of toastmaster. The following toasts were responded to: "The Doctor and the State Society" by Dr. Francis P. Ball, Lock Haven, the society's guest of honor; "The County Medical Society in 1906" by Dr. C. C. Miller; "The Doctor in the Board of Health" by Dr. J. M. Sheedy; "The Doctor and the Pure Food Commission" by Dr. W. Albert Nason; and "It Will Never Get Well if You Pick It" by Dr. Fred H. Bloomhardt. They were all interesting and listened to with considerable enjoyment and pleasure.

Frank A. Ford, Reporter.

BUCKS—November.

The annual meeting of the Bucks County Medical Society was held at Doylestown, November 14. Vice-president Pursell, presided. The secretary, Dr. Myers, had charge of the minutes.

Dr. Samuel A. Leinbach, Quakertown; Dr. Walter H. Brown, Richlandtown; and Dr. Charles N. Burkhardt, Blooming Glen, were elected to active membership.

The following officers were elected: President, Dr. John B. Carrell, Hatboro; vice-presidents, Dr. James I. Cawley, Springtown, and Dr. Charles B. Smith, Newtown; secretary, treasurer and reporter, Dr. Anthony F. Myers, Blooming Glen; censors, Dr. William R. Cooper, Point Pleasant, Dr. Alfred E. Fretz, Sellersville and Dr. George M. Grim, Ottsville; committee on public policy and legislation, Dr. George M. Grim, Ottsville, Dr. Anthony F. Myers, Blooming Glen, and Dr. James N. Richards, Fallsington.

Drs. Crewitt and Richards, as a committee, presented a memorial sketch of the late member, Dr. Howard M. Griffee, Taylorsville, to be made a part of the records of the society.

Communications were presented by Drs. A. E. Fretz, H. L. Thomas, William Hannum and W. S. Erdman. The papers were excellent and elicited a very free discussion. Many difficult cases in practice were cited and many impromptu remarks offered that added much to the interest of the meeting.

The society passed an unanimous resolution urging the appointment of Dr. A. F. Myers a member of the Board of Examining Surgeons for Pensions, to fill the vacancy caused by the death of Dr. H. M. Griffee.

Those present were Drs. Borzell, Brown, Burkhardt, Carrell, Cawley, Coburn, Cooper, Crewitt, Erdman, Fell, Fretz and Fretz, Grim, Groff, Hannum, Hellyer, Johnson, Kerns, Leinbach, Murphy, Myers, O'Connell, Ott, Plymire, Pursell, Rice, Richards, Seibert, Smith, Swartzlander, Thomas and Thomas, Walton and Wareham.

Anthony F. Myers, Reporter.

CHESTER—October.

The regular meeting of the Chester County Medical Society was held at the Coatesville Hospital, October 9, with the president, Dr. Clarence S. Kurtz, in the chair. The following members were present: Drs. Baugh, Graves, Kerr, Kurtz, Maxwell, Nickel, Patrick, Pennell, Reel, Rettew, H. A. Rothrock, Scott, Smith, Spratt, Swing, James T. and Jackson Taylor, and visitors, Dr. John B. Roberts of Philadelphia and Dr. Bertha Lewis of Malvern.

Dr. Roberts delivered an interesting and instructive address to the society on "The Physician in Politics."

Dr. H. A. Rothrock read an excellent paper on the "Subjunctivitis of von Graefe."

Dr. Edward Kerr exhibited a large copperhead snake which was captured in the hills north of Downingtown where he reports them as quite abundant.

H. Y. Pennell, Reporter.

DAUPHIN—November.

The regular meeting of the Dauphin County Medical Society was held Tuesday, November 6, 1906, at the Academy of Medicine, Harrisburg.

A paper on "Physiologic Albuminuria" was read by Dr. C. R. Phillips, and was followed by a general discussion. The writer of the paper reported the result of a series of tests of the urine of men taken before and after exercise. Basing his conclusions upon the reports of others and his own series of tests, he concludes that albumin is a constant constituent of the urine after exercise; that the presence of a trace of albumin after exercise is normal, as much to be expected as is increased heart action and blood pressure, being merely an evidence and result of this condition.

The paper was illustrated by histologic and pathologic slides of kidney sections. Ten microscopes, furnished by members of the society, were used to simplify the slide exhibit.

C. R. Phillips, Reporter.

DELAWARE—December.

The monthly meeting of the Delaware County Medical Society was held on Thursday, December 6, 1906, at 3:30 p. m., with Dr. J. L. Forwood in the chair, Dr. Stiteler acting as secretary *pro tem.*

Dr. Robert S. Maison presented a paper on the etiology and bacteriology of typhoid fever in which he stated that the State Department of Health had laid out for itself the practical elimination of typhoid from Pennsylvania. Some recent observers report the finding of the bacilli in the sweat, the saliva and in the expired breath. The latest circular of the State Department of Health recommends the disinfection of discharges from the nose and mouth, the screening of patients from flies and mosquitoes, the killing of all insects in the room, the exclusion of domestic pets, and the disinfection of the room after termination of the case.

Referring to the persistence of the bacilli outside the body the following facts have been established: Drying destroys the bacilli with only moderate rapidity and they have been found alive in a dry state after three months. In distilled water they may live for five days, while in sterilized water they can live eighty-one days. Nitrites in the soil or water lengthen the life of the bacillus. Crude sewage is, as a rule, free from nitrites, while sewage which has been filtered through soil contains nitrites. This explains why well water polluted with cesspool or drain leakage has the capacity of retaining infection for a long time. Robertson has shown by his experiments that typhoid bacilli are capable of growing very rapidly in some soils, and that in soil containing no organic matter they did not survive. Cultures planted at a depth of eighteen inches grew to the surface, while those on the surface of the ground and exposed to the sunlight soon died. These experiments would seem to prove that it is more dangerous to bury typhoid excreta than to spread them on the surface of the ground where they are exposed to sunlight and drying. The chief media by which typhoid is carried are water, milk and other foods infected either directly, as oysters from polluted oyster beds, or indirectly by flies and other insects.

Dr. Maison referred to two great epidemics in this state, Plymouth and Butler, in both of which the epidemics were caused by infected water, the streams supplying the towns being polluted by typhoid discharges.

When the water from a well used for drinking purposes is found to be polluted, it is ordered disinfected and cleaned and the board hopes in this way to prevent the spread of the disease. Formaldehyd disinfection is also being employed after the treatment of each case.

The Doctor referred to the many cases in the county this fall, and requested the coöperation of the physicians in reporting their cases promptly. The paper brought out a general discussion.

The following resolution was passed:—

The Delaware County Medical Society sends its thanks and congratulations to Dr. Samuel G. Dixon, Commissioner of the Board of Health of Pennsylvania, on the good effect obtained by the free distribution of antitoxin, and would state that in every case in which an immunizing dose has been used to control our late epidemic, it has prevented the spread of the disease in every infected family.

ELLEN E. BROWN, Reporter.

LANCASTER—DECEMBER.

The regular monthly meeting of the Lancaster City and County Medical Society was held in Malta Temple, Lancaster, December 5.

Present: Drs. Appel, Atlee, Berntheizel, Bowman, Breneman, Brenholtz, M. L. Davis, Day, Denlinger, Detwiler, Frew, Garretson, Gerhard, Good, Harter, A. H. Helm, Hinkle, Houston, Hurst, Kennedy, G. C. and J. W. Kinard, Kohler, Koser, Lehman, Leslie, Livingston, McCaa, Mitchell, J. L. and H. A. Mowery, Musser, Newpher, Reeser, J. P. and P. J. Roebuck, G. R. Rohrer, Roland, H. B. Roop, Shaeffer, Stahr, Steward, Sultzbach, Tinney, Trexler, A. V. and H. Walter, Weidler, F. B. Witmer, and Horatio C. Wood, Jr., Philadelphia.

The minutes of the preceding meeting were read and approved.

Applications for membership were received from Drs. Walter K. Baer (Univ. of Pa., 1905), Lancaster; and John Milton McCanna, (Jefferson Med. Coll., 1905), Mt. Joy.

The following new members were elected: Drs. Joseph C. Jenkins (Medico-Chi. Coll., 1902), Lititz; John Furgeson Hope (Jefferson Med. Coll., 1904), Lancaster; and Harry Shirk Dissler, (Medico-Chi. Coll., 1903), Schoeneck.

Nomination of officers for 1907 were as follows: President, Dr. G. R. Rohrer; vice-presidents, Drs. C. P. Stahr and B. F. Good; secretary, Dr. P. P. Breneman; treasurer, Dr. T. B. Appel; reporters, Drs. W. S. Brenholtz, P. P. Breneman; librarian, Dr. P. P. Breneman; censors, Drs. G. W. Berntheizel, O. Roland, J. Mitchell; trustees, Drs. A. G. Bowman, J. H. Musser, J. J. Newpher.

Dr. Horatio C. Wood, Jr., of Philadelphia read a very interesting paper on "The Place of Veratrum Viride in Therapeutics," and a vote of thanks was extended to him by the society. The paper was freely discussed as the drug has been an "idol" to many of the members of the society for years. The following members took part in the discussion: Drs. Roebuck, Detwiler, Day, Houston, Lehman, Berntheizel, Hinkle, Hurst and Appel, and Dr. Wood closed the discussion.

Resolved (on motion of Dr. Appel), That the president elect shall, as soon as convenient after assuming his office, appoint the following standing committees:

1. A committee on increase of membership, of which the secretary of the society shall be one, to consist of five members. This committee shall investigate all new practitioners registering in the county, and shall endeavor to have them connect themselves with the society.

2. A committee on legal affairs to consist of five members whose duty shall be to see that the state laws regulating the practice of medicine are observed in this county. This committee shall have authority to engage a legal adviser, at a salary authorized by the society. He shall report infractions of the law to the society, and if the society so decide, prosecute offenders in the name of the society.

3. A subsidiary committee on legislation to consist of three members whose duty shall be to coöperate with the central committee of the Medical Society of the State of Pennsylvania.

On motion the society adjourned.

PARK P. BRENEMAN, Reporter.

LAWRENCE—DECEMBER.

The Lawrence County Medical Society met at the residence of Dr. E. M. McLaughry of New Castle, with Vice-president Charles A. Reed in the chair. At roll call the following members were present: Drs. Campbell, Dean, Foster, Jack, Kissinger, Linville, McDowell, McKee, McLaughry, Miles, Redmond, Reed, Sankey, Williams, W. G. Wilson and Womer.

The business of the society was taken up and bills paid. It was decided that the society have a banquet and Drs. Foster, Zerner, and Linville were appointed to have full power to arrange for the same.

In the absence of the essayist, Dr. McComb, Dr. Miles opened the discussion on the subject of the evening, "The Necessity of Enforcing the Quarantine Law," and spoke of the care that we should take to quarantine all contagious diseases, not merely for the benefit of the immediate family but to protect the community. He also spoke of the necessity of making a careful diagnosis so that in case of a minor trouble quarantine should not be ordered and the children kept out of school. This led up to the good that would be derived from having a city bacteriologist. He thought that a city the size of New Castle should have one by all means, and that agitation of this question might induce the council to act along this line. He also thought that we should have a physician for a health officer.

The subject was well discussed by the members present. Some thought that, with the establishing of the new state laboratory where we could send all specimens to be examined, we could hardly expect a city laboratory here; others thought that the state laboratory would be of little use in cases of diphtheria, for before we could receive the report the case would have developed enough to be readily diagnosed.

B. E. SANKEY, Reporter.

LEHIGH—NOVEMBER.

The monthly meeting of the Lehigh County Medical Society was held in the School Administration Building at Allentown, Tuesday, November 13, at 2 P. M. Those present were Drs. Arner, Bingaman, Bleiler, Butz, Cawley, Dickenshied, W. B. Erdman, Eshbach, Fetherolf, Hausman, Hendricks, Henry, Hertz, Kline, Leh, Litzenberger, F. C. and G. F. Seiberling, Weaber, and Young.

The following committees were appointed: Program, Drs. W. A. Hausman, M. F. Cawley, Hope T. M. Ritter; nominating, Drs. W. B. Erdman, H. H. Riegel, F. C. Seiberling, N. C. E. Guth, E. H. Dickenshied; banquet, Drs. W. J. Hertz, W. W. Eshbach, F. A. Fetherolf, W. D. Kline, J. T. Butz, and A. W. Hendricks.

The banquet will be held at the American Hotel on January 8, the next annual meeting of the society.

Dr. F. A. Fetherolf of Allentown presented a paper on "Uterine Curetage."

Dr. W. B. Erdman presented the following resolutions which were adopted by the society:—

Whereas, The Mutual Life of New York, the Equitable and several other "old line" life insurance companies have made a simultaneous, uniform reduction of fees for medical examinations; and

Whereas, Such action was taken by the companies without the courtesy of a notice to the medical profession in general, and the examiners in particular, and without the giving an opportunity for conference or protest; and

Whereas, The fees heretofore received for medical examination of applicants for insurance were moderate enough when the modern standard of medical equipment is considered, and in view of the increased prices of the necessities and luxuries of life while at the same time the standard of living has been raised, therefore be it

Resolved, First, that the reduction of the fees for medical examinations announced as aforesaid is unfair and unjust, and that this is not the proper time for such reduction, and the medical examiners having heretofore received only a moderate compensation are not the proper subjects on whom to practice economy in the management of life insurance.

Resolved, Second, that the Lehigh County Medical Society hereby protests against such reduction and pledges its members to refuse to accept the diminished fees or to sign any circular or agreement by which they are to accept such reduced fees, and that they will not make any examinations for "old line" companies for less than five dollars. W. A. Hausman, Jr., Reporter.

MIFFLIN—November.

The meeting of the Mifflin County Medical Society was held at the office of Dr. A. S. Harshberger, Lewistown, on November 9, with an unusually full attendance.

After the transaction of the routine business, Dr. J. A. C. Clarkson read a carefully prepared paper on "The Differential Diagnosis between Diphtheria and Tonsillitis." In the discussion that followed the majority thought that it is not always possible during the first visit to determine which the disease might be; that in rare cases it was absolutely necessary, no matter how experienced the physician, to wait a short time for the further development of the disease. The necessity of an early diagnosis, on account of quarantine regulations, was brought out. It was also mentioned that, during the present epidemic of diphtheria in Lewistown, about sixty cases have already been treated, with only four deaths. This favorable showing was claimed to be largely due to the prompt and liberal use of antitoxin. All present gave their unqualified approval of the use of antitoxin.

The inefficiency of the present method of quarantining houses where contagious diseases exist, was discussed, and the society passed a resolution recommending the Board of Health to appoint a competent person to oversee the disinfecting of the houses after the patients have recovered.

A communication concerning the so-called "Dr. Rich Cancer Remedy" was laid on the table after a brief discussion.

The yearly dues of the members were increased from $1.75 to $2.00.

The exceptionally pleasant, fraternal feeling which has characterized the medical men of Mifflin County for so many years was made apparent on this occasion, and all enjoyed the liberal repast that Dr. Harshberger had provided.

WALTER H. PARCELS, Reporter.

MONTGOMERY—NOVEMBER.

The regular meeting of the Montgomery County Medical Society was held in Norristown, November 7, with a large number in attendance. Dr. J. Newton Hunsberger, Skippack, read a paper on "Race Suicide."

His class in medical college graduated one hundred and twenty-four members. Fifteen years later eighty-one replied to requests for statistics. Sixty-four were married and had had one hundred and five children. Statistics gathered from the graduates of Massachusetts colleges showed a very low birth rate. Unfortunately those best fitted for rearing children too often fail to realize their privilege and responsibility.

It is the great middle class, the class from which have sprung and from which will continue to spring the ablest, the cleanest, the best men and women—the "leaven which leaveneth the whole lump" and who constitute the back bone of our national supremacy; in this class, we repeat, the birth rate has fallen off most markedly. Do we understand and fully appreciate what this means? It means that the curse of selfishness is sapping the very roots of life. It means the decay of spiritual ideas and the death of true patriotism. It means the breaking up of homes. It means the divorce court and the triumph of sensualism.

The responsibility which children bring inculcates self-denial and self-restraint. Thinking for others becomes a habit. Those who are childless through their own wrong doing do not know the pleasure of self-denial; their natures become narrow, selfish, and warped, and their souls atoms. It is a truism that from large well-born families come the best citizens. They early learn self-reliance; are far from false sentiment; are tolerant and helpful to each other, and lose the egotism and self-consciousness so commonly seen in an only child. Luxury seldom enters into such homes. Satiety is unknown with its *blasé* expression. Want may even show his gaunt form, but in spite of all this, there are more manly men and womanly women found in large families and more real happiness than is ever dreamed of by a childless couple or when a single child is surfeited, stunted, and spoiled by needless luxury and display.

The discussion was general and quite animated and was participated in by Prof. Wolf of Philadelphia, Drs. Heffner, Weaver, Weber, Seiple, Wiley and Whitcomb, and was considered from the economic, physiological and social sides. The responsibility of physicians was regarded as being very important from the standpoint of the education of the people, and the people were urged to consider the responsibility which is incurred in doing anything that would interfere with the process of nature and the use of illegitimate measures for the growth of the race.

J. K. WEAVER, Reporter.

WESTMORELAND—NOVEMBER.

The Westmoreland County Medical Society held its regular meeting in the directors' room of the Westmoreland Saving and Trust Company, Greensburg, November 13, at one P. M. There were eighteen members present.

Dr. C. C. Hersman of Pittsburg, read a paper, his subject being "The Effects of Typhoid Fever on the Nervous System." Dr. R. P. McClellan of Irwin, read a paper on "The Cause of Acne." Both papers were interesting and a free discussion followed.

Our membership now numbers eighty-six, there being about one hundred and forty-nine physicians in the county.

M. W. HORNER, Reporter.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X. No. 4. ATHENS, JANUARY, 1907. SUBSCRIPTION : $2.00 PER YEAR.

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Isaac C. Gable, York.
VICE-PRESIDENTS :
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Second—William B. Ansley, Saltsburg.
Third—Philip R. Koons, Mechanicsburg.
Fourth—Henry M. Neale, Upper Lehigh.
SECRETARY :
Cyrus Lee Stevens, Athens.
ASSISTANT SECRETARY :
Theodore B. Appel, Lancaster.
TREASURER :
George W. Wagoner, Johnstown.

TRUSTEES AND COUNCILORS :

Thomas D. Davis, Chairman, 261 Shady Ave., Pittsburg, Term Expires 1908.

John B. Donaldson, Canonsburg,	Term Expires 1909	Henry Beates, Jr., Philadelphia,	Term Expires 1907
William S. Ross, Clerk, Altoona,	" " 1909	Luther B. Kline, Catawissa,	" " 1907
David H. Strickland, Erie,	" " 1909	Thomas M. Livingston, Columbia,	" " 1907
Geo. W. Guthrie, Wilkes-Barre,	" " 1908	Isaac C. Gable, York,	Ex-officio.
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Committee on Religious Newspaper Advertising: Albert P. Francine, Chairman, 1404 Spruce St., Phila.

OFFICERS OF SECTIONS:

Medicine—John A. Lichty, Chairman, 4634 5th Ave., Pittsburg. Herbert H. Herbst, Sec'y, Allentown.
Surgery—John H. Gibbon, Chairman, 332 So. 15th St., Philadelphia. Charles P. Stahr, Sec'y, Lancaster.
Specialties—Lewis H. Taylor, 83 South Franklin St., Wilkes-Barre. Robert Milligan, Sec'y, Pittsburg.
Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association : President, William J. Mayo, Rochester, Minnesota ; President elect, Joseph D. Bryant, New York; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago.
Next Annual Session, Atlantic City, N. J., June 4-7, 1907.

Address.

ORATION ON NEUROLOGY—ADVANCES IN THE SURGERY OF THE NERVOUS SYSTEM CONSIDERED FROM THE STANDPOINT OF THE NEUROLOGIST.*

BY T. H. WEISENBURG, M. D.,
Instructor in Neurology and Neuropathology, in the University of Pennsylvania, Philadelphia.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Some surgeons when writing upon this subject are wont to express their amazement at the truly marvelous advances which have been made in the surgery of the nervous system during the past one or two decades, and are given to expressions of admiration for the skill exhibited by members of their own craft, acknowledging, however, the debt they owe to their neurological brethren.

Neurologists, being no less generously inclined, while admitting the valuable services of the surgeon, are prone to subscribe to the views of the famous Roman physician, Galen, who, in 200 A. D., expressed himself of the opinion that surgery is only a method of treatment and surgeons the instruments.

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*From the Department of Neurology, University of Pennsylvania.

The modern neurologist would go even a step farther and would carefully select the surgeon to do his operation. In this day of specialists when surgeons limit themselves to operations upon certain portions of the body, it is a source of regret that the exclusive practice of surgery of the nervous system does not gain more advocates.

Most surgeons believe themselves capable of diagnosticating appendicitis, and of operating upon such a case. The pathology of the condition to them is, or should be, an open book. How many of the surgeons who operate upon the brain are capable of an accurate diagnosis, and how many know the pathology, to say nothing of the anatomy and physiology, of the nervous system! Yet some surgeons never hesitate to act on their own initiative and without neurological assistance. It is this want of knowledge which has caused the pessimism of some surgeons and made possible the many atrocious operations of the past, and some which are practiced even in the present day.

The surgeon should know at least enough of the anatomy, pathology, and physiology of the nervous system to give the patient falling into his hands the best chance possible for life and health; or he should seek the aid of the neurologist to this end. It must not be forgotten, however, that whatever progress was made in the surgery of the nervous system before 1860 we owe entirely to the surgeons, as the science of neurology up to this period was only in its infancy.

There is no more fascinating history than that of the surgery of the brain. It appears that trephining was practiced by Neolithic men who inhabited Europe several thousand years ago.[1] They were supposed to have trephined principally for epilepsy and insanity. Most of the operations were performed on infants, and it is noteworthy that the majority of the holes found in the trephined skulls of that period were situated in the parietal region and over the motor area.

In the time of Hippocrates, 400 B. C., trephining was done mostly for injuries. From that period to modern times trephining passed through many epochs, sometimes falling into total disrepute, while in other periods it was the fashion to trepan the head at the slightest provocation. Thus, in 1664, the following curious certificate was written: "I, the underwritten, Philip, Count Nassau, hereby declare and testify that Mr. Henry Chadborn did trepan me in the skull twenty-seven times, and after that did cure me well and soundly." One wonders how the much suffering Philip, Count Nassau, managed to survive these numerous operations in that day of no ether and sepsis.

Injuries of the head were recognized, and with the exception of antisepsis, were treated with just as much skill centuries ago as at present, the more frequent occurrence of racial wars with the use of battering instruments making fractures of the skull common. The teaching of Hippocrates, that in all wounds an incision of the scalp should be made and the bone exposed, can certainly not be improved upon. He even advised that resections of the bone should not be made on the temples nor above the temporal artery, for convulsions on the opposite side would be set up.

It is hardly necessary to trace this interesting history of the surgery of injuries in more detail, yet a word concerning the work of Larrey, Napoleon's eminent chief surgeon, would not be out of place.[2] This physician insisted upon the necessity of enlarging by incision and drainage all punctured wounds, trephined for hemorrhage of the middle meningeal artery, besides for depressed and comminuted fractures, or any other condition that caused depression of the skull, and recognized the value of drainage in preventing pressure in intracerebral hemorrhage. Baron Larrey's knowledge of the symptoms of cerebral injuries was in advance of his time. He recognized that injuries of the cortex would impair the intellect, and, more important still, he knew the value of relieving brain pressure by trephining.

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[1] The historical data was obtained from that admirable work of John Fletcher Horne on "Trephining in Its Ancient and Modern Aspects," London, 1904, John Bale and Sons.

One who sees many instances of cerebral injury can not but be amazed at the remarkable resistance of the brain to septic conditions and injury. Consider, for instance, the frequent operations practiced by the ancients, especially by the so-called trepanists in the seventeenth century, as in the case previously mentioned in which the skull was trepanned twenty-seven times. In the coal regions of this state, in depressed fractures of the skull, coal dust nearly always infiltrates into the wound and yet sepsis is very uncommon. In the celebrated "crowbar" case the man lived for several years. In our modern wars bullet wounds of the head sometimes are not followed by pus. A remarkable instance was told me by my friend, Colonel W. W. Wotherspoon, U. S. Army. After a skirmish in the Philippine Islands he came across a young native lying unconscious in a trench. The boy's head had been laid open by a bolo, the knife having split the bone, deflecting it to one side and exposing considerable brain substance. He was removed to an army hospital, the bone replaced and in a short time the boy was seen hopping around and, except for a slight hemiparesis, was in excellent condition.

Since the work of Broca in 1861 and the suggestions of Hughlings Jackson in 1864, soon followed by the work of Fritsch and Hitzig, and of Ferrier between 1870 and 1875, our views of localization have made great strides, and it is because of this that nervous surgery has reached its present high position. Our views of the pathology of the brain and cord have made equal advances, and it is the combined knowledge of the physiology and pathology of the nervous system which enables us to-day to say when and where to operate or not to operate.

It was not until 1884 that modern views of localization were put to actual test in a case of brain tumor, although previous to this time focal operations had been done for traumatic and other conditions. Durante deserves credit for having done the first successful operation for brain tumor. In May, 1884, he removed a fibrosarcoma from the frontal lobe; the patient, according to report, living three months after the operation and being in good condition. In this country, Hirschfelder and Morse, of San Francisco, were the first to operate for brain tumor, an attempt being made to remove a glioma from the motor area on February 15, 1886, this being the fifth tumor operation recorded.

It might not be out of place to refer briefly to those early surgeons and neurologists whose work made possible the present position of nerve surgery. Among the former stand out prominently the work of Macewen, Horsley, Bergmann, and Krause of Europe, and of Weir, Park, Roberts, Keen, and Hearn of this country. Of the neurologists besides those already mentioned, the achievements of Schäfer, Munk, Luciani, Mott, and later of Flechsig, and of Weir Mitchell, Leguin, Mills, Putnam, Dana, and Starr of this country will ever be a source of inspiration to students in neurology.

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[2] *Johns Hopkins Medical Bulletin*, July, 1906. The achievements of Baron Larrey have been most interestingly written upon by J. Chalmers Da Costa.

In this country great activity circled around the meeting of the Congress of American Physicians and Surgeons in 1888, at which time cerebral localization and brain surgery were much discussed; Charles K. Mills of Philadelphia, Victor Horsley and David Ferrier of England, Park of Buffalo, Starr and Weir of New York, and Keen of Philadelphia, taking a leading part in the discussion. It was at this time that Dr. Mills advocated the view of separate motor and sensory localization, and placed the motor centers largely in front of the central fissure, being one of the first, if not the first neurologist to advance such views. He was the first to subdivide the sensory areas into distinct centers, views which now, eighteen years after, are first becoming generally admitted. It is largely to the work and enthusiasm of this neurologist that we owe the present high position of American neurological surgery.

It is curious that it should not have occurred sooner to surgeons that large cranial openings were of advantage. It was not until 1889 that the osteoplastic method of resection was first employed by Wagner. It is no wonder that not only were tumors not removed, but also not discovered through the small trephine openings practiced before this time. To-day cranial openings exposing one third of the lateral surface of a hemisphere are made with ease and with practically no danger to the patient.

Although in the majority of instances the removal of a brain tumor is not accomplished, this fact should not deter surgeons from operating, for an exploratory operation is indicated on the skull at least as much as on the abdomen. Such an operation has a double advantage in that it relieves the intracranial pressure, thereby not only ameliorating the immediate symptoms, but also relieving headache and often preventing blindness by lessening the severity of the choked discs. In fact, too much emphasis can not be placed upon the advantages of an early exploratory, or so-called palliative operation.

It has always seemed to me that in these palliative operations which are presumably done for the relief of intracranial pressure, very little if any cerebrospinal fluid escapes. If this is so, whatever benefit arises from such an operation is not due so much to the escape of fluid, but it may be, as Horsley has long thought, due to the interference with the nutrition of the growth, or because of mechanical reasons. A tumor growing in any portion of the cranial cavity will necessarily increase the intracranial tension, this probably being first manifested at the point of growth and, as the tumor grows, in all parts of the brain. Because of this, the dura is stretched, causing pain, and the optic chiasm is compressed, this resulting in a choked disc. In an operation when the dura is incised, the brain bulges because of the increased pressure, and, whatever benefit results, is due to relief of intracranial tension by the opening made, and not by escape of cerebrospinal fluid. One can readily forgive the ancients for thinking that it was because of the escape of noxious fumes that benefit resulted.

The value of palliative operations has long been recognized although in a crude manner. Celsus, writing in 30 A. D., says he saw a "melancholy man wounded in the head with a sword, his brain pan broken; so long as the wound was open he was well, but when his wound was healed his dotage returned again." Guianerius cured a nobleman in Savoy by boring alone, leaving the hole open a month together, by means of which, after two years of melancholy and madness, he was delivered. Since the introduction of modern surgery palliative operations have of course been frequently done, but it seems curious that the latest advanced procedure should be boring the skull for diagnostic purposes, steel or platinum-iridium needles being used for the subsequent exploratory puncture. These have a cavity and groove at their edge and along their longitudinal axis so that tissue may lodge. By this means Pfeiffer[3], was able to recognize by microscopical examination of the delivered tissue the presence of tumor in ten cases out of the twenty which were examined.

Surgeons have attempted to remove tumors from almost every portion of the brain. Cerebellar growths, the removal of which only a few years ago was hardly thought of, are now occasionally successfully attacked. In the recent Toronto meeting of the British Medical Association, Sir Victor Horsley stated that he had operated for pituitary lesions ten times. The extent and growth of cranial surgery can perhaps be estimated by quoting the statistics kindly furnished me by Dr. C. H. Fraizer of the work done by him in the last five years in the Hospital of the University of Pennsylvania. Cerebral operations were performed thirty-eight times, twenty-two of these being done for tumor and sixteen for epilepsy, and the cerebellum was operated upon sixteen times.

It is only proper that some reference should be made to the work done by surgeons throughout this great state, work which, although unrecorded, is worthy of being classed with the best. Your honored chairman, Dr. W. L. Estes, performed twenty-nine brain operations before 1895. Similar work has been done no doubt by other surgeons in every part of the state.

I shall not devote much time to the consideration of technic, for that properly concerns the surgeon. It seems, however, always advisable that both the surgeon and the neurologist should agree upon the method of operation, and that the neurologist should be present to give whatever aid he can, especially in regard to interference with the brain tissue itself. Needless handling is to be deplored, as is also puncturing the brain with anything but a sharp needle. Many operations are made fatal, not by the opening itself, but by the subsequent treatment. Whatever the instrument used for opening the skull, whether it be a dental engine, chisel and mallet, or a DeVilbis saw, the object is to open the skull quickly. I have seen the skull opened in little more than three minutes by means of a dental engine. Contrary to the opinion of some English surgeons, rapid cranial openings are of decided advantage, for they not only shorten the time for the anesthesia, but the brain is subjected to less jarring, and again, why lengthen any operation when it can be done just as safely in shorter time?

So far my remarks have been confined only to the surgery of injuries and tumors of the brain. It has always been a source of chagrin to the neurologist that so little can be done to cure cerebral hemorrhage. Dural and cortical hemorrhages should, of course, be operated upon, but it is hardly justifiable to cut into a brain in search of a subcortical hemorrhage. Even should the hemorrhage be found, the actual destruction of the brain substance would counterbalance whatever questionable benefit would arise from the removal of a clot. Operations upon infants for the removal of dural or subdural hemorrhages, as advised by Cushing, I would strongly indorse.

There is no more discouraging history than that of the surgery of epilepsy. Several thousand years ago, because of ignorance and superstition, the brain was exposed so as to allow the "demon in possession" to escape, as it was supposed that this caused the affection. Epilepsy was thought to be a sacred disease, and trephining was done as a sacred rite. Even at present exact knowledge of the disease is still wanting, and it is because of the various confusing theories advanced by as many different individuals that so many diverse operations have been practiced for the relief of this condition. To quote from Da Costa's paper on the "Surgical Treatment of Epilepsy": "Various surgical methods of treatment have been recommended, including ovariotomy, clitoridectomy, circumcision, nerve stretching and nerve section, orchidectomy, the removal of irritating scars and of painful cicatrices, blistering, cauterization, the use of seton, operations upon the ocular muscles to correct defects, the ligation of the vertebral arteries, the excision of the surgical sympathetic ganglion, and trephining of the skull." To this can be added various abdominal operations.

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[3] Pfeiffer: *Neurolog. Centralblatt.*, Vol. XXV. No. 13, July 1, 1906, p. 639.

No one questions the advisability of operating in a case of epilepsy which is due to a definite cause, as an injury, hemorrhage or tumor, but to operate in cases of idiopathic epilepsy which have no discoverable focal basis either in the brain or in any other portion of the body, is to my mind a questionable procedure. In the first place idiopathic epilepsy is an organic disease and is dependent upon structural developmental faults. These imperfections are not located in any one portion of the brain, as the motor area, but probably involve all parts. The epileptic convulsion is only the result of this maldevelopment, that is, only a symptom of a general disease. How futile, then, any focal brain operation!

Extracranial operations have been done and are still practiced on the theory that toxins and other reflex causes occasion epilepsy. The surgical correction of ocular defects and the removal of nasal polyps may be an advisable procedure, but to ascribe these and similar defects as the causes of epilepsy is the veriest nonsense. Toxins unquestionably enter into the etiology of the convulsion as a symptom, that is, given a structurally defective brain, it is necessary for a foreign element, perhaps a toxin, to bring on the convulsion; but there is no reason to believe that toxins themselves are the ultimate causes of epilepsy.

Much that has been said about the surgery of epilepsy can be equally applied to the surgery of idiocy, imbecility, and the various insane conditions. Fashions in surgery, as in dress, have a habit of repeating themselves. As in epilepsy, the ancients believed that insanity and delirium were sacred diseases, or were due to the possession of the body and soul by demons and evil spirits, hence they opened heads to allow these to escape. Some modern surgeons open heads in insanity, idiocy or imbecility to allow the brain to grow or to expand, believing that the growth or the function of the brain has been inhibited and that the opening of the skull will allow it to regain its proper size and function. The difference, after all, is not so great between the superstition of the ancients and the reasoning of some modern physicians.

The fault here, as in epilepsy, lies in the fact that symptoms are taken for the disease itself. Most insane conditions have an organic and, usually, an embryological basis, a view only recently expressed by Dr. Mills in the Toronto meeting of the British Medical Association, and one with which I am in accord. Idiocy, imbecility, and such insane conditions as dementia praecox, epileptic insanities, and paranoia are unquestionably due to developmental faults. With Dr. J. Chalmers Da Costa I believe that operations for such cases do about as much good as attacking a thermometer for the purpose of regulating the existing temperature.

Some physicians believe in the advisability of operation for hypochondriacal delusions and for hallucinations. Delusions and hallucinations are only symptoms and are liable to change, as in one of Dr. Da Costa's cases, in which the patient believed that he had a kitten in his viscus. An emetic was applied and a cat was shown him in the bucket. The patient seemed satisfied, but within an hour he stated that he had something else in his stomach,—an eight day clock!

Not much advance has been made in the surgical treatment of hydrocephalus. It is difficult to understand how even permanent drainage of the lateral ventricles could cure the condition, presuming that such surgical procedure is successful. The secretion of the cerebrospinal fluid is probably the result of overaction of the choroid plexus, and drainage will not stop further secretion. After the ventricles are thoroughly dilated it is difficult to understand what benefit could result from relieving them of the fluid which they must have. Altogether, I am of the opinion that operations on hydrocephalic conditions are contraindicated, and that we have been laying too much stress upon the possible benefits of the relief of intracranial pressure by the depletion of cerebrospinal fluid.

Surgery of the Spinal Cord. It has only been in comparatively recent years that the spinal cord has been considered a fruitful field for surgical procedure, the first successful operation being performed by Horsley in a case with Gowers, of an intradural fibrosarcoma of the upper thoracic region. The growth was removed, June 9, 1887. Ten years elapsed before the second successful operation was performed by Freeman in a case with Eskridge, in 1897, in this country. Since then spinal operations have become more frequent. There is every reason that such operations should be successful, for our knowledge of spinal localization is fairly exact, at least more so than that of the brain.

Spinal tumors, if not multiple, are, as a rule, easy to enucleate and are benign; one of the most successful operations I know of was performed by Edward Martin in a case of J. H. Musser and W. G. Spiller, an intradural cyst being found and removed.

One of the most difficult questions to decide is the advisability of operations in cases of fracture and dislocation, and spinal injury. As a rule, if there is a fracture and dislocation the spinal cord has been severely crushed, and even though pressure is removed the cord will not be benefited. Of course it is good surgery to reduce a fracture and replace a dislocation, but to my mind the dangers of sepsis and the fact that no regeneration can occur in the spinal cord, contraindicate surgical interference, at least in the more severe cases.

In spinal injuries in which there is no fracture nor dislocation, hemorrhage may occur either in the center of the cord or in minute areas throughout its whole extent. Here, an operation would be of no value. In the first place, it is impossible to get at the hemorrhage, and again, if the spinal cord is left alone, if any recovery is possible, outside interference will be only detrimental.

It has been thought by some surgeons that in cases of complete severance of the spinal cord, suturing of the ends may cause regeneration and a consequent return of power. This, to neurologists who are aware of the fact that regeneration does not occur in the spinal cord, seems an error. Experiments upon lower animals have proved that this is impossible. After a spinal cord is completely severed, it would be rather difficult to approximate crushed ends. Even if this were successfully done, so much tissue would be destroyed on either side that regeneration, were it possible, could hardly proceed.

When lumbar puncture was first introduced it was hailed with much enthusiasm, but unfortunately we have learned that it is a dangerous procedure and of not much benefit. The reason is that, as in the cranial palliative operations, the actual removal of the cerebrospinal fluid, while it may temporarily relieve pressure, is of no value in either curing or ameliorating the original cause of this excess of tension.

The danger of the operation lies in the sudden disturbance of pressure and it is possible that the sudden deaths recorded as the result of this operation may be due to the disturbance of circulation in the bulb. Lumbar puncture for diagnostic purposes is, however, sometimes justifiable.

The value of the Röntgen ray for diagnostic purposes in nervous affections has also proved disappointing. Many claims have been made for it, but so far it would be unwise to risk a diagnosis upon its indications. It is only a question of time, however, when the technic of x-ray work will be so far advanced that great aid will be given to focal diagnosis. In the recent Boston meeting of the American Medical Association, Dr. Edward Angell of Rochester, New York, exhibited a new stereoscopic apparatus by means of which the outlines of cranial lesions could be most clearly seen.

Surgery of Peripheral Nerves and Muscles. Perhaps more progress has been made in the surgical treatment of peripheral palsies during the last decade than in the other branches of nerve surgery. Barely eleven years have elapsed since Ballance and Stewart, of England, joined the facial nerve to the spinal accessory for the relief of facial palsy, this being the first instance of nerve grafting performed on man. Since then, nerve anastomosis has been done in cases of anterior poliomyelitis, hemiplegia, for the relief of athetosis, and in many instances of palsies of peripheral nerves.

That regeneration of peripheral nerves is possible, was known in 1795 by Cruikshank, who was apparently the first to recognize that severed nerves could grow together, although this honor has been usually given to Flourens. It seems curious that these experiments should have been so long forgotten, and that its principles should not have been applied until just one hundred years after their discovery.

It was not until the work of S. Weir Mitchell, George R. Morehouse and W. W. Keen appeared in 1864 that the surgery of peripheral nerves was placed upon a fundamental basis. Later, Weir Mitchell published a separate volume on the peripheral nerves. Many of the descriptions of nerve palsies found in this admirable book can even at this date not be improved upon. His description of the first case of sympathetic paralysis ever recorded, is classic.

Neurectomy and nerve stretching have been done for many years for the relief of neuralgias, and for neuritis, and have even been done for the relief of the contractures in cerebral and spinal palsies. Happily, nerve stretching is largely being abandoned as a therapeutic measure. In a disease like sciatica it is difficult to understand how stretching the nerve will relieve the pain any more than stretching the fifth nerve will relieve tic douloureux: as in the latter disease it might be a justifiable procedure to cut the sensory roots in the spinal cord for the relief of sciatica.

It is not my purpose to dwell at any length on the principles of nerve regeneration. Whether the central or the peripheral theory is accepted, the important factor is that regeneration will take place between the cut ends of a peripheral nerve unless mechanical means are taken to prevent such union. I will also leave it for the surgeon to decide whether end to end anastomosis is preferable to end to side, or other methods. I shall only speak of the therapeutic application of nerve transplantation.

In facial paralysis the result of an ordinary cold in which no improvement has taken place for six months, in palsies the result of middle-ear disease, or in cases of accidental severance, suturing of the ends in the latter case or anastomosis with the hypoglossal or the spinal accessory nerve is clearly indicated. This operation should also be considered in spasmodic facial tic.

Peckham of Providence, was the first to

do nerve anastomosis in anterior poliomyelitis, in 1899. Independently of this, Spiller, in 1902, recommended this operation, it being successfully performed by J. K. Young. Later Spiller applied the principles of nerve anastomosis in hemiplegia and in a case of athetosis, in which brilliant results were obtained by Frazier.

In considering the surgical means to be employed for the cure of peripheral palsies, tendon transplantation must not be overlooked. As a therapeutic measure it was first introduced, in 1881, by Nicoladoni. Parrish, of New York, deserves credit for having been the first American to perform this operation, in 1892. Great advances were made by Goldthwait, of Boston, who, in 1895, was the first to do muscle transplantation, and by Lange, of Munich, who first advocated suturing tendons to the periosteum.

In choosing between the two operations, nerve transplantation is obviously more advantageous, because by this means function would be restored to the paralyzed muscles. As in all new operations much discouragement will at first result, because in almost all cases of palsy such therapeutic measures will be considered, whereas in only certain selected cases can good results be expected.

In an address on the surgery of the nervous system reference must be made to the surgery of tic douloureux. This malady, which, according to Cushing, was accurately described by Avicenna about 900 years ago, has baffled successful treatment even up to the present. This is because even now its pathology is not understood. We do know that by cutting all connection between the peripheral ends of the trigeminus and the pons, either by extirpating the ganglion of Gasser or by cutting its sensory root, the pain will cease.

Many operations have been proposed and performed for the relief of this condition. The seventh nerve has been cut, the peripheral branches have been excised, or stretched, but it was not until 1890 that Macewen and Horsley, independently of each other, attempted to divide the trigeminal nerve intracranially. Rose, of England, soon after first attempted to remove the Gasserian ganglion. This operation, which at first was nearly always fatal, is now performed without much loss of blood and with success. Only recently (1904) Cushing reported twenty cases, and he writes me that since then he has had a second twenty with much better results.

After the medical treatment of tic douloureux has proved unavailing, it is a safe rule to consider first such peripheral operations as neurectomy, except in the more severe cases in which it is advisable to perform a major operation at once. Recently Murphy, of Chicago, has recommended exposure of the peripheral nerves with injection of osmic acid into its sheath.

Of the more radical operations, mention should be made of the suggestions of Van Gehuchten, that the peripheral branches should be torn out, believing that this has a reactionary effect on the nerve cells in the ganglion, not only destroying these but also causing degeneration of its bulbo-spinal root. This operation was originally suggested by Blum in 1881. Abbe advised intracranial section of the second and third divisions of the trigeminal nerves. None of these operations, however, have been sufficiently done to pronounce judgment.

The operation of choice is either removing the ganglion of Gasser or cutting its sensory root. On physiological grounds, the latter operation is to be preferred, providing, of course, that regeneration does not occur, a fact which has now been established. This operation was first suggested by Ferrier, in 1890, in the discussion of Rose's operation, and was first performed by Horsley, although the operation was not done with this definite object in view. Spiller, in 1898, again suggested it, this operation being then undertaken by Frazier, in 1901, it being the first time that the sensory root was successfully cut, the pain ceasing entirely.

In conclusion, when we consider that most of the advances in neurological surgery have been made in the last twenty years, and not a few of these in the last decade, we can not but feel that there is much hope for still greater advances in the near future.

As regards the surgery of the brain, these advances will probably come in the first place through our slowly increasing knowledge of subdivisional cortical localization and through improvements in the methods of opening and exploring the cranial cavity. What has been recently done in nerve anastomosis forecasts more brilliant achievements.

In closing, I can not refrain from referring to the great influence for good which such combined meetings as those of the surgical and neurological sections of the American Medical Association, and the sections of this society, have exercised by bringing together men in different but correlated lines of work.

Original Articles.

LATE CEREBELLAR ABSCESS OF TRAUMATIC ORIGIN.

BY DANIEL A. WEBB, M. D.,
Scranton.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The subject of cranial injuries assigned to me for presentation is as old as text-books on surgery. To resort to the easier method of treating the subject text-book fashion would be to trifle with the time and patience of practical experienced surgeons.

Few of us can, as a recent surgeon, quote one's own record of several thousand cases with the varied personal observations to be derived therefrom. Dennis has reviewed the entire subject of cranial injuries in detail in the April, 1906, *Journal Intracranial Surgery*. His is a most exhaustive and complete presentation, leaving nothing to add. I have, therefore, elected to present to you in lieu thereof, a clinical case illustrating one of the late results of cranial injuries. In a symposium on injuries to the head, in the April, 1906, number of the *International Journal of Surgery*, Bailey summarizes the results into three classes: (1) Traumatic cerebrathenia; (2) traumatic insanity; (3) defect conditions.

I have to present to you a fourth class as exemplified in my case of cerebellar abscess. Brain abscesses following injury are rare, as text-books and current literature show. In fact the etiological factor of traumatism in the cited cases is adducted by process of exclusion from the more common causes of local infection in any one of the cranial sinuses.

The causative relation of traumatism is variably estimated by authors. Albert, Osler, and Phelps say that traumatism causes more abscesses than does otitis media. Star says that five per cent. are due to traumatism; Gowers estimated it at twenty-four per cent.; Dennis and Bailey make no mention of it. In a somewhat exhaustive search into current and recent, foreign and home literature, I have found but a few isolated cases in which traumatism alone was assigned as the cause. I refer in these remarks, of course, to abscesses of long standing. Abscesses of otitic or recent traumatic origin are of frequent occurrence. English surgeons appear to have made the most contributions to the literature.

Under the idiopathic can probably be found many cases of forgotten head injury. These idiopathic cases are almost invariably found in the male, a fact possibly of some explanatory significance. The anatomical postmortem findings adequately explain the period of latency in the fact of a firm protruding capsule.

Cranial injury bears no constant relation to brain injury; they often exist in inverse ratio of significance as to the recovery of the patient.

In serious cranial injuries my experience has seldom shown a correct and adequate relation between the symptomatology, subjective and objective, and the pathology. So that if some related cases of latent abscesses are a test to our credulity, it is but in keeping with the vagaries of brain pathology.

After a severe brain injury there result changes of relative position, of pressure, of protection, and of blood supply. As a result we notice the psychical changes,—temporary and sometimes permanent. The brain cells after injury show a marked response to alcoholic stimulation. It is permissible to presume that a diminished power of resistance exists, that a specific virus of low intensity, limited influence, and slow onset might here produce an abscess. The source of the organism may exist in some undiscovered necrosis of bone at the site of injury.

It is significant of local cause that abscesses of known traumatic origin are situated at the site of injury. The crucial question for solution is whether, in those traumatic cases with an absence of any local or distant infection sometimes called idiopathic, we estimate traumatism at its proper etiological value. Having once granted this premise, we have but to deal with a matter of degree in the period of latency. (Gowers', twenty-four years.) The abscess wall, as in the case presented, is of such firmness and thickness as to provide sufficient protection to adjoining brain tissue.

As in the present instance, the capsule may be intact at postmortem, the patient exhibiting pressure and not infection symptoms. No fistulous channel connecting capsule with ventricle or surface of brain could be discovered.

The symptoms of chronic cerebellar abscess are those of pressure. If the latency be incomplete there will be headache, mental torpor,convulsions, progressing to giddiness, vomiting, ataxic gait. The gait is the characteristic staggering one of cerebellar diseases; or the latency may be complete, as described by Gowers, when no clue of impending disaster can be anticipated. In traumatic cases the headache is most intense at the point of injury and not at that of *contrecoup*. This, indeed, was the only localizing symptom in some of the successful operative cases of traumatic origin.

Indeed, a survey of the literature teaches that it is dangerous to wait for a complete symptom-complex before resorting to exploratory trephining. Whitehead, in the *Journal of Laryngology, Rhinology and Otology*, February, 1905, cites an instance of cerebellar abscess in which intense occipital headache was the only localizing symptom. When persistently severe, it is sufficient indication for exploratory work. Traumatic abscess of central lobe was exceedingly rare. Hicks operated successfully with no very definite history. Experimental removal of lateral lobe by Luciana and Russell,supported by Ballance of England, confirmed the clinical findings of lateral lobe abscess and assisted in their correct interpretation. This he claims, when there is a tendency to curl up in bed on opposite side away from the lesion, would point to either a right or left involvement.

Luciana considers this the action of the abscess in cutting off influence from opposite cerebral hemispheres. An abscess not involving fibers of superior cerebellar peduncles would not produce these symptoms. Some fibers of superior peduncle passed to dental nucleus, some to cortex. Abscess may but partly destroy these fibers.

Nystagmus is away from lesion; increased patellar tendon reflex is likewise indicative of restrained cerebral influence from the opposite side. In a word, the symptoms are those of brain tumor plus the characteristic gait of labyrinthine disease.

Diagnosis. Latent cerebellar abscess can with difficulty be differentiated from tumor. The facts mentioned above plus optic neuritis lead conclusively to cerebellar pressure. In accordance with the foregoing interpretation of symptoms and signs based upon experimental operative and postmortem findings, lateral lobe involvement is more readily diagnosed than is central. The latter, however, eventuates into lateral pressure of at first one and then both sides. If careful attention is paid to the special symptoms of giddiness of gait, movements away from lesion, including the nystagmus, occipital headache, weakness and increased patellar reflex on side of lesion, without reference to temperature, errors in diagnosis will be fewer.

Jack, in *Journal of Laryngology, Rhinology and Otology* of June, 1905, advocates lumbar puncture as a diagnostic and possibly palliative measure. In meningitis the fluid is opaque and cloudy.

Operative Treatment. (There is no medical treatment.) The results of operation for brain abscesses may be found in any book on brain surgery. Skill in brain surgery for obvious reasons is possessed by few; the results of these few, the masters, and not the isolated efforts of the many, must be the criterion of success. Those of you who were favored to hear the address in surgery at the recent meeting of the British Medical Association in Toronto by Sir Victor Horsley must have been impressed with the salient fact that this domain of our work is in process of splendid evolution from the *laissez faire* to the intelligent, daring, careful, and successful method of timely interference. You will permit me to refer to some of his curative as well as palliative procedures in cases of intracranial disease, including abscess. He asserts that he can, by timely trephining and opening into the subdural space, with certainty avert the calamity of a permanent blindness. This he advocates most earnestly. We can, therefore, in cases of optic neuritis due to intracranial pressure, feel well repaid, even though we fail to localize or remove the cause with a simple decompressive measure. He categorically lays down the rule that optic neuritis commences on the side of the lesion. This definite unequivocal addition of a sign, easy of observation, and pregnant with significance, to other pathognomonic evidence would seem to place the diagnosis, and consequently the treatment of cranial abscess, in a position more accurate and well defined than many another lesion proper for exploratory investigation.

Curative. Results will depend on extent and place of tissue destruction. (I may parenthetically add that Grant of London introduced his finger into the trephined opening, cureted away broken down abscess, evacuating one ounce of pus, and disintegrated cerebellar tissue with perfect recovery.) Frazier would extirpate the lateral lobes if necessary to complete work. Horsley advocates displacing lobe and removing no more than is absolutely necessary, stating that either cerebral or cerebellar lesion treated thus exhibits surprising power of recovery.

I would earnestly recommend a perusal of his address in the *British Medical Journal*, August 23, for fuller details of technic. There being no alternative, results, however disheartening, are a net gain. According to Politzer's quoted statistics (1902) of Hammerschlag's 37 cerebellar abscess cases of an otitic origin there were 14 cures and 23 fatal cases. Korner out of 16 cases, reported 9 cured, 7 fatal; Koch out of 19 cases, 10 cured 9 fatal; Okada out of 43 cases, 16 cured, 27 fatal. (Politzer—Diseases of the Ear, 1902.)

The operative results in traumatic abscesses, according to reported cases, would appear to show fifty per cent. recoveries. In explanation, the infective organism in a latent abscess is necessarily of attenuated virulence, originally and subsequently. Moreover, it is not always possible in extensive local necrosis of otitic origin to completely remove the source of infection, which will explain delayed fatal results in those instances. Some analogy as to the virulence of the organism might be instituted between conditions here and those in pelvic infections. We all know how differently we prognosticate in operating upon acute and upon chronic pelvic abscess.

Technic of Operation. Essential point is to make sufficiently large opening of access; to make a suboccipital trephining and not attempt to drain uphill as is sometimes done in post-mastoiditis abscesses. Drain with rubber tubing and not gauze.

History of present illness and condition upon admission: Male, aged 29 years. Married. Occupation, miner. On admission to the State Hospital, March 20, 1906, the following symptoms were complained of: Severe headache, vertigo, and inability to walk. Temperature, 99; pulse, 78; respiration, 24. General appearance good. Examination of chest, heart, lungs, abdomen and contents, and extremities negative.

Special symptoms: The headache at times was moderate in degree, but now and then extremely severe, referred to the occipital and sometimes frontal regions; headache increased on sitting up; scanning speech; difficulty in articulation; muscular and cutaneous sensibility normal; patellar and plantar reflexes delayed, vomiting at times, but never projectile. Babinski's sign and ankle clonus absent. In walking with the aid of assistants the gait is a characteristic cerebellar one; Romberg's sign present: the head and body bent forward. The above was noted when walking faceward, but he could take four or five steps backward without much staggering. While in bed there was a tendency to throw himself from one side to the other, usually to the right, but he would often lie flat on his back; while turning from left to right he suddenly lost power of control from beyond right angles with the bed and would fall helplessly prone. When asked a question he would at times answer intelligently; when requested to write his own name he was unable to do so, having no control of the pencil at all. While in bed he could execute all movements with his feet and legs, extension, flexion, and laterally. Owing to the patient's condition we were unable to get a satisfactory history as to previous injuries sustained; when his wife and friends visited him at the hospital we learned that he was a chronic alcoholic, going off on a debauch for weeks and months at a time. She also related that six years previous to that time he received a severe injury in the mines with several contusions and lacerations of the scalp, the most severe laceration and injury being behind the right ear where a large scar was found after recovery. Since accident the patient had been of a melancholic disposition, becoming intoxicated on drinking less than half the former quantity, and is of a restless uncertain disposition. He had also received frequent head injuries during these debauches from falling on the pavement. Patient was delirious, mostly at night, was also in a stupor for hours at a time.

No paralysis, convulsions nor rigors; no rigidity of neck. Examination of special senses, negative; no evidence of local or distant infection. Pupils reacted to light and accommodation sluggishly. Ophthalmoscopic examination revealed the bilateral optic neuritis; photophobia.

Diagnosis: Cerebellar tumor. In the absence of any recent history of traumatism, as well as absence of infective foci, the above was the tentative diagnosis.

Notes on hospital chart as follows:—

March 20-31, restless, pain in the head, occipital and frontal; delirious at times; sleeps well at night; takes nourishment well.

April 1-10, same as above.

April 11-12, bowels and bladder movement involuntary; noisy at times; pulse slow, 42.

April 13, patient slept fairly well; noisy at intervals.

April 14, pulse rapid and weak, 100; respiration labored and shallow; death.

Pulse between 78 an 100 up to two days before death; temperature practically normal at all times; respiration 24.

Postmortem: After much persuasion a postmortem of the head only, was permitted. A deep-seated abscess of middle lobe anteriorly situated was discovered. A firm complete capsule was intact. Adjoining cerebellar tissue normal in appearance. No evidence of bone disease anywhere. No communication leading away from capsule.

FRACTURE OF THE BASE OF THE SKULL, RESULTING FROM DIRECT VIOLENCE THROUGH THE INFERIOR MAXILLA.

BY ALEXANDER G. FELL, M. D.,
Wilkes-Barre.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

S. B., Aged twenty-five years; laborer; Lithuanian. On March 27, 1906, during a fire he fell from a porch, distance about twenty feet, striking on the point of the inferior maxilla, causing a complete, compound, comminuted fracture between the median line and the left mental foramen. When admitted to the Wilkes-Barre City Hospital, he was in a stupor, bleeding from the mouth, nose and ears, and suffering from injury to the right shoulder.

The stupor was not so profound that he could not be aroused; he at times vomited fluids and clotted blood. On March 29, his mental condition was much improved, to be followed on April 1, by a semicomatose condition; pupil of right eye dilated and not reacting to light, subconjunctival hemorrhage of this eye and paralysis of the left side of face. From March 27 to 30, the temperature remained between 98 degrees and 100 degrees; pulse, from 64 to 84; respiration, 24, first, to 16. On March 30, the temperature arose to 103 degrees, while the pulse remained between 60 and 80. On March 31, temperature 103.8 degrees; pulse 120; unconscious; irregular breathing; lying upon his left side with legs drawn up. The temperature remained between 102 degrees and 104 degrees until April 8, or thirteen days after the accident. The injury to the right shoulder was severe, parts tender and difficult to move, attended with considerable hemorrhage into the tissue surrounding the joint; later from these parts large quantities of clotted blood were removed. This blood was partly broken down and may have caused the elevation in temperature, but the first rise in temperature was accompanied by coma, dilatation of the pupil of the right eye, and paralysis of the left side of the face; a later rise in temperature on April 18 more nearly corresponded with the formation of abscess at right shoulder. At this time his mental condition was gradually improving, although the patient was irritable and difficult to manage. During the early period the stools were involuntary, likewise urination. The quantity of fluid passed from the ears was not profuse but was constant from the first, always containing blood. There has since developed slight abscess of the ears, but, while conscious, hearing was not disturbed. His mind gradually cleared until now he appears to have normal intelligence.

This case was interesting on account of the method of injury,—being a fracture due to direct violence transmitted along the lower jaw to the base of the brain. At first, only the signs of concussion were presented, excepting the bleeding from the nose, mouth, and ears, but this could be readily accounted for by the damage done to the jaw and to injury to the glenoid fossa.

The patient apparently rallied to a degree from the symptoms of concussion; this condition was accompanied by vomiting. He was placed in bed with cold to the head, darkened room, absolute quiet, a calomel purge, an enema of soap suds, turpentine, and castor oil and morphin hyperdermically to ease pain. Conditions improved until after the third day of injury when the temperature gradually arose to 103 degrees. On the fourth day the temperature arose to 103.8 degrees, and, accompanying this, a semicomatose condition with dilatation of the right pupil and right subconjunctival hemorrhage, left eye normal, and paralysis of the left facial nerve. With these new symptoms, a diagnosis of simple concussion did not seem sufficient, as here are all the symptoms of a fracture of the base of the skull; viz, violence to head, unconsciousness, hemorrhage from nose, mouth, and ears, and paralysis of special nerves. Injuries to the base of the skull from this source of violence are not usually so severe as fractures resulting from indirect violence caused by force applied to the vertex or by falling from heights, giving the line of force through the spinal column. In the former, the line of fracture may extend by radiation, causing extensive injury to any of the three fossa following the point of application of force. In injuries from force applied to the jaw the damage is usually confined to the middle fossa; when the force is sufficiently great it may force the condyles of the jaw through the glenoid fossa and penetrate the base of the brain and not diffuse the fracture, or the force may cause a fracture of the anterior portion of the auditory canal. On account of the force being applied to the petrous portion of the temporal bone, the resulting damage is usually confined to the vicinity of these parts and the resulting displacement at the base is usually slight. In consequence of the force being applied to the glenoid fossa, instead of the sixth nerve, which is most often injured in basal fractures, the seventh nerve is more apt to be damaged because of its passing through this portion of the temporal bone. The seventh nerve enters the temporal bone, accompanied by the auditory nerve, and, as in this case, only one nerve may be injured. It will be noted that at no time during consciousness was hearing interfered with, while paralysis of the muscles of the left side of the face existed; thus, the conclusion was drawn that the interference to the seventh nerve must have been after it had parted company with the auditory nerve, or in the Eustachian canal. On the right side, the pupil was dilated and at the same time the left side of the face was paralyzed. To cause this, there must be some interference with the third nerve or a stimulation of the sympathetics, but, taking note of the coincident appearance of the subconjunctival hemorrhage of the same eye, the fairest conclusion to draw is that it is caused by pressure due to hemorrhage along the nerve or to injury near the sphenoidal fissure, and possibly both had occurred; or hemorrhage might possibly have taken place from some portion of the middle meningeal artery, which would account for the accompanying semicomatose condition. The late appearance of the symptoms is not uncommon, but it is not likely that the middle meningeals were severed, as the effects would have been earlier, more pronounced, and more permanent. There was a temptation to operate and endeavor to reach a bleeding point, if one existed; only the lack of certainty as to which side to attack first, delayed, as its effects on either side indicated pressure. It is more probable that the pressure was due to congestion, or to slight hemorrhage from the capillaries, as it is improbable that the middle meningeal arteries of both sides were injured or that the injury was greater on one side than the other, but most likely they were on a par, only affecting different nerves, and the rapid improvement in the nerves would incline one to believe that no severe injury to the nerves had taken place.

In a number of instances the force has been sufficient to drive the condyles of the jaw through the bone into the brain, tearing either the lateral sinus or the superior petrosal sinus, causing death by the severity of the hemorrhage and contusion. The condyles may become so fixed that it may be impossible or inadvisable to attempt to remove them. Dr. Roswell Park in Dennis' System of Surgery, reports the case of a young girl, where he excised the jaw bone below the condyle, making an artificial joint with good results. In the case reported, if the jaw had not broken, probably the condyles would have been driven through the base of the skull and the case have ended fatally.

The prognosis of these cases must always be guarded, but, as a rule, they are not so fatal as fractures of the base caused by other forces. There may be apparent recovery, to be followed later, maybe in a month, with abscess formation in the brain and meninges, in consequence of entrance of septic material, causing fatal termination; or abscess may form in the mastoids and middle ear, from which small spicules of bone may be passed out. The treatment is the same as in other cases: Guarding against entrance of septic material, especially through the ears and posterior nares, extreme quiet with the least disturbance possible, no glaring nor bright lights, placing the head in a position least likely to be disturbed, cold to the head, a brisk purge, drawing the urine if necessary, sedatives if required, a light and nutritious diet. If pressure symptoms are pronounced, an effort might be made to relieve it by operation.

THE PRESENT STATUS OF CRANIAL SURGERY.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In the past decade there has been what might be called a revival of interest, at least among surgeons, in operable lesions of the brain. Whether this increased activity has been more or less general, it has been particularly noticeable among a limited number of surgeons who have made neurological surgery a special study. Perhaps to this factor more than to any other is to be attributed the advances which have been made in this particular field. Specialization, however, is not an unmixed blessing; for, although it enables certain groups of men to penetrate farther into unexplored fields and reveal hitherto hidden truths, unless guarded against it tends to narrow one's view of the broad field of medicine.

After these five or ten years of renewed activity in neurological surgery it would seem fitting that we should review the situation and acquaint ourselves with its present status. In this symposium upon the head and spine one or more papers will deal with the treatment of traumatic lesions so that I will speak more particularly of the surgery of the cranial nerves, of hemorrhages of the newborn and of childhood, of epilepsy, and of cerebral and cerebellar tumors.

During the past five years I have had under my care at the University Hospital seventy-five or more cases exhibiting intracranial lesions. The great majority of these were operative cases and in some instances more than one operation was performed upon the individual case.

Cranial Nerves. Of the twelve cranial nerves there are but two with which one may be called upon to deal intracranially, namely the fifth and eighth, and two extracranially, the seventh and twelfth.

The treatment of facial palsy by establishing an anastomosis between the distal end of the divided facial nerve and either the spinal accessory or, as I prefer, the hypoglossal has now become a thoroughly established surgical procedure. The results which have been obtained warrant the adoption of this operation in every case which does not respond in two or three months to other modes of treatment. The operation, while a delicate one and requiring special instruments, is not attended with any risk to life and will result, almost invariably, in the restoration of symmetry of the face in repose, less frequently in the restoration of voluntary movement in certain groups of muscles, as in raising or lowering the eyebrows or angle of the mouth, and in some cases in restoring the more complicated movements, such as those of laughing or smiling.

The spinal accessory nerves we are called upon to resect in cases of spasmodic torticollis. To relieve this very distressing condition, however, further interference is necessary. I have never seen any satisfactory results obtained, unless, in addition to the spinal accessory, the roots of the first, second and third cervical nerves were resected. (These nerves supply the muscles which rotate the head, and their exposure requires one of the most difficult dissections the surgeon is called upon to perform.)

In the three cases in which I have performed this operation one recovered entirely and two were afforded a very decided measure of relief.

The Fifth Nerve. The removal of the Gasserian ganglion for the relief of trigeminal neuralgia was not very long ago regarded as a most difficult and hazardous operation. Only in the most desperate cases was the operation resorted to and often so imperfectly performed that recurrences were not infrequent. In recent years, however, considerable attention has been devoted to the technic of this operation with the result that there has been a very material lowering in the mortality. In experienced hands the mortality should not be over five per cent.; when taking into consideration the nature of the operation and the gravity of the affection, the risk is not at all disproportionate. Horsley, who has had a larger individual experience than any other surgeon, lost but six in 120 cases. In my own series of cases, which has run into double figures, I have lost but one case. The patient was a man of advanced years who died of renal complications a week after the operation. In but one instance was hemorrhage so alarming as to cause any apprehension, and in this case there was, I believe, an unusually large middle meningeal vessel, the walls of which had been infiltrated by an adjacent tumor.

While the extirpation of the ganglion or the division of its sensory root is usually performed for the relief of trifacial neuralgia originating in a lesion primarily of the ganglion or its branches, the operation should not be restricted to such cases. Thus in one of my cases the patient suffered excruciatingly from pressure upon or infiltration of the ganglion by an inoperable tumor at the base of the brain. The removal of the ganglion was followed by such relief that the patient lived the remainder of his days in comparative comfort. We should perform this operation, I believe, more frequently than we do in such cases as these, where the patient has a hopeless lesion but without intervention is destined to a life of misery. Any operation which, whether or not it prolongs life, betters the condition of the patient is always a justifiable procedure.

The Auditory Nerve. The intracranial division of the eighth, or auditory nerve, was first suggested by Krause in 1903 for the relief of aggravated cases of tinnitus aurium, and since that time three more operations of this character have been performed. It is, of course, only in selected cases that the operation would be of any benefit; namely, in those in which the lesion is situated in or about the labyrinth and the trouble is not of central origin. This nerve may be exposed by following the same route as one would adopt for the exposure of cerebello-pontile tumors. I have frequently exposed both the seventh and eighth nerves in exploratory operations in this region. Bryant recommends an approach to the nerve through the middle fossa. The results obtained thus far are not such as to warrant the operation being regarded as an established treatment for persistent tinnitus. There is, however, a rational foundation for the operation and by further application in carefully selected cases the results may be more promising. In speaking of the accomplishments of modern cranial surgery it is well worthy of mention.

Epilepsy. The tendency of the age is toward conservatism. More patients should be referred to the epileptic colony and fewer to the surgeon. If operation is to be performed at all it should be done before the epileptic habit is established and, what is equally and of paramount importance, the operation should be followed by a most rigid and prolonged course of medicinal and hygienic treatment. Idiopathic epilepsy is not a surgical disease. There should be some evidence that the attacks are or were of the Jacksonian type. Probably not more than five per cent. of cases are affected favorably by operative intervention.

Hemorrhages of the Newborn and Childhood. Intracranial hemorrhage has long been recognized as an indication for operative intervention, but exclusively in hemorrhages of traumatic origin. There is no question about the propriety of operating in cases in which hemorrhage threatens life, nor should there be in cases in which hemorrhage has been so slight as only to excite one's suspicion. The ultimate consequences of the presence of an organized clot may be so serious that the risks of an exploratory operation at the time of the accident are comparatively insignificant.

The indications for operation have recently been extended. In a paper read before the American Surgical Association last June, I suggested the propriety of applying surgical therapy in the treatment of the cerebral hemorrhages of childhood. We have all seen cases of hemiplegia or monoplegia in children; many of these are the result of a cerebral hemorrhage; if the child recovers from the immediate effect of the hemorrhage it almost invariably suffers some permanent physical disability, and one out of every two cases become epileptic and a less number mentally defective. These spontaneous hemorrhages in children occur in or near the cortex, that is, in an accessible region; they usually become converted into cysts and often are associated with arrested development in the brain tissue of the adjacent area.

I recall two patients referred to me by Dr. Mills which may be cited as examples of this group of cases. Both were boys, both of them when quite young had attacks associated with unconsciousness and terminating in a residual monoplegia. Both subsequently developed epilepsy, one of a very aggravated type. At the operation in each case a cyst was found situated in the motor cortex. As one might expect, the results were only partially satisfactory, but if three to five weeks after the onset of their illness these patients had been operated upon, the removal of a clot at that time would have rescued them from the inevitable consequences; namely, palsy and epilepsy.

The second group of cases in which the application of surgical measures has been advocated, includes the intracranial hemorrhages of the newborn; Cushing suggests that in these cases the same treatment be applied as would be appropriate to the adult in cases of traumatic origin. If the child reacted from the immediate effect of the hemorrhage he would probably recover, but in the course of time, perhaps weeks or even months, the results of the lesion will be manifested as palsies, blindness, deafness, feeblemindedness, idiocy, or epilepsy. The operation is, of course, not without risk, but the desperate nature of the condition seems to me to warrant what I consider a less desperate remedy. On the one hand there is imminent danger of sudden death, and, on the other, there is a life doomed to physical disability, loss of the sense of sight or hearing, epilepsy, or idiocy.

Tumors. Perhaps in no other division of cranial surgery have such advances been made as in the therapy of cranial tumors. The skepticism of Bergmann threw a wet blanket over this field of surgical endeavor, but only for a while, since the subject has been taken up again with renewed vigor. To more accurate methods of localization, for which more than to any other man we are indebted to the indefatigable labors of Dr. Mills, as well as to the adoption of more bold and rapid methods of exposure of the brain, we must attribute the recent additions to our knowledge of this subject.

The points of interest to the practitioner as well as to the surgeon are these:

1. How many tumors of the brain are amenable to surgical treatment?

2. What is the danger of an exploratory operation?

3. Under what circumstances should an operation be undertaken?

Because of their inaccessibility or of the nature of the growth, twenty per cent. of brain tumors may be said to be operable; that is to say, in one out of every five cases, if the operation has not been unduly postponed, there is a reasonable hope of finding and removing the tumor. The latter must be situated in or just beneath the cortex and must be more or less encapsulated. These figures should encourage those who entertain skeptical views as to the propriety of surgical intervention if they stop to consider that they are dealing with an otherwise hopeless disease. It should be borne in mind that these figures are not based upon autopsy records, when the tumor has attained fatal dimensions. If the operation is to be performed it should be done immediately one's suspicions are aroused, realizing that at this time the chances of success are infinitely greater and the dangers of exploration practically *nil*.

By the adoption of modern methods of technic one third to one half the surface of a hemisphere may be exposed in a few moments. A few moments more suffice to explore the exposed area. If nothing be found the osteoplastic flap is replaced; the stitches are removed and the patient is out of bed on the second day.

The actual removal of the tumor, if it be suitably situated and not of an infiltrating type, adds but little to the risk. I have been surprised to find that this step of the operation may have so little if any deleterious effect on the patient's condition.

Inoperable Tumors. From the statistics already quoted it will have been noted that a very large majority of brain tumors are inoperable in so far as they can not be removed. Eighty per cent., at least, come under this category. We have at our command, however, fortunately, an operative procedure which assures relief for the most distressing of the symptoms characteristic of brain tumor. The so-called palliative or decompressive operation, while practiced a number of years ago, did not until recent years attract the attention it deserves. As the term implies, the operation is devised to relieve intracranial tension and this is accomplished by removing a portion of the skull and splitting the dura. The brain tumor subject, no matter where the tumor is situated, suffers almost invariably from headache, vomiting and disturbance of vision. These symptoms are due in large measure to the increase of tension within the skull.

In association with Drs. Mills, Spiller and Weisenburg during the past three years I have had the opportunity at the University Hospital to observe the results of eleven purely palliative operations. All of these cases recovered from the effects of the operation and some are living two or more years since the operation was performed. I consider this one of the most effective in the whole category of medical or surgical remedies. To be able to prolong life and relieve the patient during the remainder of his days of insufferable headache, of persistent vomiting, and at the same time to preserve or even to restore vision, is indeed, a surgical triumph.

There are two classes of cases in which a decompressive operation may be required; one in which the tumor can not be localized or is inaccessible, the other in which the tumor can not be removed in its entirety. The operative risks are trivial. My own experience does not include a single fatal case. When one considers the comparatively high mortality following the so-called radical operation, it is natural and proper that one should err on the side of conservatism when in doubt whether or not to attempt removal of the tumor.

The following advice may be given for the benefit of patients in whom the presence of a brain tumor is suspected:

1. Do not wait until your diagnosis is confirmed beyond peradventure.

2. Do not wait until you are absolutely sure of its localization.

3. Do not wait until the choked disc is so advanced that the optic nerve is completely atrophied and the patient hopelessly blind.

4. Do not wait until antisyphilitic remedies have been tried for months; a gumma of the brain is quite as much a surgical lesion as a tumor.

5. Do not wait until from suffering and inanition the patient is so utterly exhausted as to be unfit for the operating table.

BRAIN COMPLICATIONS FOLLOWING MASTOIDITIS.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

These complications may be meningitis, abscess, or thrombus in the internal jugular vein, in the lateral sinus, or in the cavernous sinus.

Infection of the brain takes place in the following ways: (1) By the facial nerve along the nerve or its sheath; (2) by continuity of tissue, the bone having become necrotic and softened, the inner plate being destroyed by the perforation of the temporal bone; (3) general infection through the circular and cavernous sinuses to the opposite side; (4) vascular connections between the sinus and the mastoid cells, thus explaining the infection of the sinus; thrombosis and brain abscess on the opposite side of the brain.

Location of Brain Abscess. (Usually in or near the place of collection of pus in the temporal bone.) In 100 cases observed by Koerner the seat of the abscess was in the temporal lobe in sixty-two per cent., in the cerebellum in thirty-one per cent., and both of those parts were thus affected in six per cent. The exceptions where abscesses were found on the opposite side were considered to be pyemic and metastatic (Troltsch and Magnus). Occasionally a brain abscess is combined with purulent meningitis of the sinuses of the dura mater (Brieger).

"Abscesses in reference to the seat of pus in the temporal bone, in the cerebrum in the temporal lobe, develop from suppurations which extend to the middle cranial fossa, abscesses occurring in the cerebellum mostly occur in purulent inflammations or caries of the posterior surface of the pyramid, more rarely in suppurations of the mastoid process" (Pomeroy).

"Depew, Komer and Politzer have observed that abscesses were situated in parts of the brain which did not correspond to the collection of pus in the temporal bone: Abscess in the pons, in the crura cerebelli, in the medulla oblongata, in the occipital lobe are very rare" (Lannois and Jaboulay).

Abscess in the temporal lobe corresponds mostly with the tegman tympani and antri. Cerebellar abscesses are generally found in the anterior and inferior parts of the hemispheres corresponding to the carious perforation in the posterior surface of the pyramid. "Cerebellar abscesses arising from the labyrinth, or its surrounding parts, generally lie in the median part of the organ,'' those arising from the sigmoid sinus, in the lateral section of the cerebellum. Those relations must be considered in the operative opening of brain abscess.

The number and size of abscesses vary. They may be single or multiple, communicating with each other, or they may be entirely isolated (Knapp, Heiman, Gennert, Politzer). Abscesses have been found in the cerebrum and in the cerebellum at the same time. ''Sometimes the abscess will discharge by a fistula through the tympanic cavity and external auditory canal.'' In size an abscess may vary from a pea to a goose egg or even larger. Sutphen says, ''In several cases the cerebral abscess occupied almost the entire temporal and frontal lobes.'' Politzer gives an instance where a cerebellar abscess had been diagnosed, when the entire cerebellum was transformed into a large cavity filled with pus. Abscesses which have existed for some time are usually enclosed by a connective tissue capsule.

According to Lebert, Schott, and Gull, it takes from three to twelve weeks for a capsule to develop. Jausen saw a fully developed capsule of an abscess, five weeks after the appearance of the first symptoms of an otitis media acuta, and ten days after the first symptoms of the formation of an abscess (Hessler). Thirty-two out of forty-nine cases of brain abscess, secondary to chronic middle-ear suppuration were encapsulated. Of thirteen following acute middle-ear suppuration, five were encapsulated. In one hundred and fifteen postmortem examinations in otitic complications Koerner found one brain abscess in 43, one sinus phlebitis in 47, uncomplicated meningitis one in 31. About one half of brain abscesses are of otitic origin (Bergaman). Brain abscess is about twice as frequent in males as in females, and occurs most frequently in patients from ten to thirty years of age.

Symptoms. Should the abscess be so located as to produce pressure upon the motor tract or upon the motor area in the cortex, localized symptoms occur; if chronic, the pressure is increased so gradually that the areas are destroyed without any stage of excitement. The paralytic stage is not preceded by convulsive movements. As the most frequent location of an abscess is in the temporal lobe, localized symptoms are only produced when the abscess has attained considerable size, involving the speech center, and producing either sensory or motor aphasia if on the left side, but not on the right side, paroxysms of fever, rigors, exhaustion, disturbance of digestion, persistent increase of temperature on the affected side of the head. The general temperature usually does not show much of an increase. Oppenheim says, ''If there is considerable and persistent increase in the temperature, it is probable that a complicated brain abscess exists.'' Headache is localized near the point of abscess. It is almost impossible to establish a relation between the seat of the brain abscess and the tenderness on percussion. Signs of increased pressure are headache, dizziness, vomiting, loss of memory, delirium, strabismus, aphasia, slow pulse, optic neuritis; slow pulse is rarely absent.

Termination of brain abscess of otitic origin is generally in death if the abscess is not opened by operative procedure. Those cases of spontaneous cure by calcification, (Gull, Pennmann) or absorption of the contents of the abscess, (Braun, Briego, Reinhard) are not convincing. Brain abscesses end almost without exception in death if an operation is not performed. The ending is caused by meningitis after rupture of the abscess on the surface of the brain, by encephalitis, by rupture and discharge of the abscess into the ventricles of the brain (Cozzolimi), and by complications with sinus phlebitis, by edema and compression of the brain of the respiratory and circulatory centers, by exhaustion, and by metastases in other organs, usually the lungs.

Diagnosis of brain abscess is not easy and is usually very difficult. It has not been proved whether optic neuritis is due to an arachnoiditis accompanying the otitis or to a meningitis serosa. If the abscess is in the temporal lobe such symptoms as aphasia, localized headache in the parietal region, tenderness on percussion and increased temperature on the affected half of the skull, or by crossed paralysis of the extremities, localized pain in the occipital region, associated with dizziness, ataxia and paralysis of the extremities, nystagmus and optic neuritis may be present.

Prognosis. Brain abscess, until within a few years, was very unfavorable. If the abscess can be reached early and the contents emptied before there is much injury to the brain, a cure may be obtained in some cases.

Treatment. Nothing but operative treatment offers any chance for saving life in abscess of the brain following suppuration of the middle ear, and it is then most favorable when the diagnosis is made from long continued headache, localized in the parietal region. This operation should be done at once or as soon as the diagnosis is made; if it can, it should be done at the time when the radical mastoid operation is done. Such alteratives as the iodid of potassium, iodid of ammonia, the different forms of mercury, or the calcium salts have very little effect. Quinin in large doses early has some effect on the general conditions.

Meningitis is probably one of the most frequent complications of mastoid disease. So early does this occur that frequently the disease of the middle ear is not detected until the symptoms of meningitis are presented. Meningitis following inflammation of the middle ear is in many cases a preventable disease, as it only occurs as a complication following infection.

Meningitis following mastoid or middle-ear disease, is no different then, from any other infection or cause, with this exception,—the cause and mode of infection may occur either from direct infection from contact with the carious bone or from the blood vessels supplying the parts. "It may be local or general, usually at the base of the brain localized as purulent meningitis, it is classified as extradural abscess, intradural abscess, diffused or serous" (Politzer).

Extradural abscess is an abscess to the inner side of the bone and the outer side of the dura mater, or, in other words, the dura mater is detached from the inner side of the bone, the pus being between the bone and the dura mater,—a form of localized meningitis. This form of an abscess frequently follows inflammation of the middle ear as a sequela of influenza. According to Heubner, "Extradural abscess occurs twice as often in males as in females."

Symptoms seldom, if ever, are such as to present a precise form or signs by which it can at once be recognized. Hoffman says, "A diagnosis of extradural abscess may be made, if we are sure the temporal bone is diseased, and, in spite of a complete opening up of the mastoid process, a group of threatening symptoms continues which is made up of meningitis, irritation, fever with intense pain over the entire temporal bone without evidence of brain pressure, or if symptoms of meningitis or of sinus phlebitis supervene." Politzer says, "Those symptoms also occur in leptomeningitis in brain abscess, and, by the formation of solid and thickened exudate on the external surface of the dura mater, signs of brain pressure may be brought about." Dench says, "The two most important signs are severe and continuous pain or headache, localized over the affected area, and a moderately elevated temperature, seldom above

101.5 or 102 degrees, slight fluctuations seldom reaching the normal standard. Vertigo and vomiting may occur, mental dullness is met in the last stages. The headache and temperature continue in spite of a free opening in the mastoid process." An important symptom of extradural abscess is the appearing and disappearing of threatening symptoms.

Prognosis. A collection of pus in the extradural region may remain latent for a long period. Any acute process involving the middle ear or mastoid may excite it to renewed activity, causing an acute diffuse meningitis, or rupture of the abscess, either with evacuation into the cranial cavity, or cerebral substance. "Death may be caused by the increased pressure if the rupture is intracranial, or external rupture takes place with abatement of the symptoms."

Should the extradural abscess be recognized and evacuated, recovery may readily occur. Knapp reports two cases of spontaneous evacuation through the outer wall of the cranium, with favorable results. The abscess opened near the occipital protuberance in both cases.

Treatment. The only treatment that offers any chance is the operative one with a free evacuation of the pus. Internal medication should be the administration of supporting, alterative and stimulating agents.

Intradural abscess is one confined between the dura mater and the pia mater. When a fistulous opening occurs through the dura mater, adhesions form between the two membranes, thus forming a circumscribed abscess. The diagnosis, prognosis and treatment are similar to those of extradural abscess.

Diffused purulent meningitis usually follows chronic inflammation of the middle ear. If diffused in character, symptoms, diagnosis, prognosis, and treatment are similar to the same disease from other causes, with the exception that this form is always due to middle-ear suppuration, either acute or chronic. Its course may be rapid or slow, lasting for weeks or only a few hours, by the opening of an extradural abscess into the brain substance.

Another form of complications following mastoiditis is the sinuses thrombosis: The partial or complete clogging of one or more large veins leading from the brain, by an infectious thrombosis, occurring as the result of an acute or chronic suppuration of the middle ear, is to be remembered.

Communication by the mastoidal veins, the sinuses and the pneuma-mastoidic spaces covering them, renders an infection of them very easy by depositing septic material in the lateral sinuses.

This infection is not involved, as is an infection from the middle-ear. When infection takes place in the large veins, a large fibrinous infectious clot fills the blood vessels. The clot may remain in the lateral sinuses, or may extend to the internal jugular vein and the cavernous sinuses. "These thrombi sometimes extend on the one hand through the jugular vein to the subclavian vein, and on the other to the confluence of the longitudinal and lateral sinuses, and from these to the lateral sinuses of the other side" (Biehl).

Some authors say this is a condition following acute suppuration of the middle-ear, or an acute manifestation of a chronic condition.

Thrombosis as the result of middle-ear disease may run its course without other brain complications, or it may be combined with extradural abscess or meningitis. "The right sinus is more frequently affected than the left. This may be because the right sinus is larger than the left" (Herzfeld).

The symptoms are rigors, sudden rise of temperature to 102 to 104 degrees, a remission of temperature to be followed in a few hours by another rise. This rise is caused by the breaking of the clot, entering the circulation. The rise of temperature may be followed by profuse perspiration or what is considered a septic temperature, emaciation and general prostration, headache, mental dullness, pulse increased so that it may not be counted, feeble and compressible, dry skin, enlarged spleen; consciousness continues to the end. A symptom of diagnostic importance, but one which is not always present in thrombosis of the sigmoid sinus, is an edematous swelling of the mastoid region, which at times spreads to the temporal region and to the eyelid (Griesinger). Thrombosis extending into the internal jugular vein may be noticed by a fibrinous band or tenseness of the region of the jugular, painful on pressure. Should any of this septic material lodge in the lungs, which is one of its favorite places for deposit, a septic pneumonia is likely to follow. This septic pneumonia is usually of a lobular variety, or a localized area of the lung tissue becomes consolidated, either clearing later on, or breaking down into a pulmonary abscess. None of the internal organs are exempt from this septic deposit, though the lungs, by their location and the part they play in the circulation, are the chief places for the septic infection.

Prognosis. Some of those septic cases probably recover, but may later die of brain abscess. The involvement of the lungs may not be fatal, depending upon the area involved and the resistance of the patient. Death may occur from systemic infection from a general meningitis or a cerebral abscess, as the results of the involvement of the lung tissue.

Treatment. If the diagnosis has been carefully made, and thrombosis of the sinus has been decided upon, then operative interference should be done at once and the infected material removed so as to prevent any systemic infection by the clot or fibrinous material being carried to different parts of the body.

Zaufal in 1884 was the first to open the lateral sinus to remove the infected clot, but the patient died in about two weeks of general septic condition. Since then we find, in papers by different authors, that the operation of opening the lateral sinus and ligation of the internal jugular vein has been done many times with a lessening mortality, but the death rate is still high. Dr. Longworthy has recommended opening and draining the cavernous sinus. This must be rather a formidable operation, and scarcely offers any hope to save life. Any abscess that may appear superficially should be opened and drained just as any other abscess, or more so to prevent a general infection, as the vitality of the body is already very low. Quinin in large doses, iron in some form of easy assimilation and food of the most nutritious kind should be given; as in many other diseases, pure air is very important.

AN UNUSUAL CASE OF TRAUMA OF THE HEAD, EXHIBITING ASTEREOGNOSIS AS THE ONLY LOCALIZING SYMPTOM—OPERATION.*

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

DR. RHEIN'S REMARKS.

The patient, P. S., aged 35, a laborer in a shovel factory, was admitted to the surgical ward of the Howard Hospital on April 1, 1906, complaining of intense, sharp, shooting pains in the right side of the head, and convulsive seizures. These symptoms, he stated, followed a blow over the right ear with a shovel three weeks previously. He was admitted to the service of Dr. Edward Martin, at whose request I made an examination on April 2, the day after his admission.

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*From the Howard Hospital and the McManes Laboratory of Pathology, University of Pennsylvania.

His family history was as follows: Both parents were dead, the cause of the father's death being unknown; the mother died of consumption. One brother died as a result of brain abscess. Two sisters were living, one of whom was subject to fits. The history of his condition preceding his admission to the hospital will be found in the notes made by Dr. Edward Martin.

At my first visit, on April 2, I had scarcely begun the examination when he was seized with a convulsion which began as a tonic spasm of the right sterno-cleido-mastoid muscle, lasting for three minutes, and during which he muttered incoherently, answered questions faintly and imperfectly, and exclaimed, "I am going to have one of those dizzy spells!" He then became unconscious, the head and eyes were turned to the left side, and a general convulsion followed. The right arm was partially flexed, the hand and fingers hyperflexed. The left hand and arm were held upward, the arm flexed, the hand hyperextended, and the fingers flexed. Both legs were in a state of clonic convulsion from the beginning, and were held in a slightly flexed position. The thighs were slightly flexed, the leg, foot and toes extended. This convulsion lasted about forty seconds, when the entire musculature was thrown into a violent tonic spasm lasting forty seconds longer. This was followed by a few purposeful movements, unintelligible exclamations, and finally a convulsion similar to the one first described. This condition lasted over half an hour, and was only terminated by the free use of amyl nitrite. During the entire attack the eyes were turned upward, except at the beginning when they were turned to the left. The pupils were dilated, the respirations abdominal throughout the entire attack, and the head was turned to the left. It is impossible to state just where the general convulsion began.

Dr. George B. Wood examined the patient on the same day, and reported that there was a scar and a depression of an old mastoid abscess. The operation had probably included opening of the squamous cells. The auditory canal was free excepting near the tympanum where there was some exudate of a fetid odor. There was a cicatrix over the attic. Slight pressure directed internally and forward caused wincing and exclamations of pain. A diagnosis of suppurative otitis media with probable necrosis was made.

On April 3, 1906, it was noted that during some of the convulsions the left side of the body was more rigid than the right. The patient stated that the left arm and leg always became rigid before a convulsion. When lying quietly in bed his left leg and arm became rigid if lightly touched, while the right side was not similarly affected. Study of the sensory conditions showed a total analgesia and anesthesia of the left arm and below the middle of the forearm, including the hand. In other parts of the arm, shoulder, and left half of the chest there was a hyperesthesia. There were no areas of anesthesia or analgesia in the face, the leg, or right side of the body.

Tests for the stereognostic sense showed interesting results. While he recognized correctly some objects placed in the left hand, and on the left leg, many were incorrectly named; for example, a purse was called a book; a piece of money was mistaken for a button; a knife, for a pencil. All of these objects were correctly named when placed in the right hand. The knee jerks and biceps jerks were present, and slightly exaggerated on both sides.

The following day, April 4, the astereognosis was more marked, and was present in the left leg as well as the left hand and arm. Sensibility to pin point was also lowered in the left leg and thigh, in the entire left arm, and on the left side of the face and head. On the trunk it was unimpaired. The grasp of the left hand was slightly diminished. The knee jerks were slightly increased, as well as all the other tendon reflexes, and equally so on both sides. The Babinski phenomenon was present on both sides. Pressure, chiefly in the region controlling the stereognostic sense, was diagnosed and, assuming that this was in the neighborhood of the parietal lobe, trephining over this area was advised. The details of the operation will be described by Dr. Martin.

The skull was first opened in the motor area and cerebral Faradization was employed to locate exactly the area exposed. A loose plate of bone measuring 6.3 cm. in length, 2.5 cm. in its maximum width, and 0.8 cm. in thickness, was found beneath the dura just above, and posterior to, the arm center, compressing the lower two thirds of the parietal lobe and probably encroaching upon the postcentral gyrus in its upper part. It was removed and the wound closed.

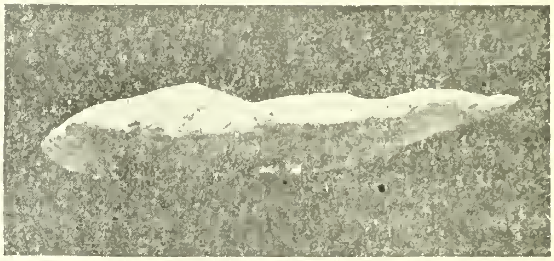

FIGURE 1.
Lateral view of plate of bone.

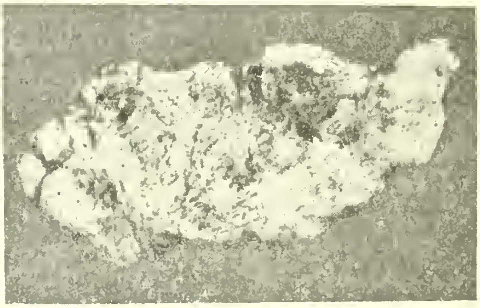

FIGURE 2.
View of under surface of plate of bone

On the following day the astereognosis had entirely disappeared. Sensation had returned on the left side of the body, the patient appeared to be more comfortable and had no convulsions, although he complained of soreness over the site of operation. He continued to do well until three days after the operation when he suddenly became maniacal; wanted to go home; refused to eat; and made constant efforts to get out of bed. He cried out wildly and angrily and attempted to tear off his bandages, complaining constantly of severe pain at the site of the operation.

On April 8, four days after the operation, the same condition persisted. There was also marked lateral nystagmus. The head was turned to the left in a rotary spasm, and deafness on the right side, which had disappeared two days after the operation, returned.

On the following day, April 9, he suffered from attacks of trembling, preceded by a sensation of vertigo. The eyes were repeatedly turned to the left, and there was much mental excitement.

On April 11 he was unable to make a fist on the left side, and could move the arm but slightly. There was also a slight return of astereognosis.

On April 14 he tottered in walking and could not stand alone. The left foot was held in a rigid manner and placed on the ground imperfectly, the outer surface alone touching. This was his condition when he made his escape from the hospital.

On June 26, 1906, he was admitted to the Presbyterian Hospital, to the service of Dr. Henry R. Wharton, who furnished me with the following history:—

The patient walked into the hospital with difficulty. He was mentally dull and confused, and unable to give a satisfactory history. He sustained a fracture of the right side of the cranial vault a year previously. A week previously he was struck in this region, and since that time had had pain and mental dullness. Previously he was in good health and able to work.

There was a large depression in the right anterior parietal region with a bridge of bone crossing it horizontally. This area was hyperesthetic; running the finger over the tips of the hair gave pain. There was also a depression in the right mastoid which looked like an old mastoid operation.

A few hours after his admission he gradually became more stupid and had several mild convulsions, not definitely localized. The depressed area filled up and became a large bulging mass.

An operation was performed by Dr. Allen about eight hours after the patient's admission. Under ether an incision was made in the bulging area and some thin, bloody fluid escaped. A second incision was made below the bridge of bone, both incisions apparently entering the subdural space. The brain and its pulsations were distinctly felt. Gauze drainage was instituted but there was only slight drainage until the fifth day after the operation, when, on the removal of the gauze and the introduction of a probe, a large amount (estimated at about two ounces) of cerebrospinal fluid escaped.

His condition seemed rather better; the hyperesthesia was gone; there were no convulsions, but he was still stupid. A variable amount of fluid escaped at subsequent dressings. There was no marked change in his condition until he gradually sank and died on the fifteenth day after the operation.

The chief point of interest in this case, from a neurologic view point, is the bearing it has upon the value of astereognosis as a localizing symptom, and upon the problem of sensory cortical representation.

The cases that have been reported exhibiting astereognosis alone or in combination with other symptoms, are quite numerous, and go to show that it may be present in a number of different lesions of the nervous system.

Astereognosis has been present in tumor of the pons (Potts and Spiller); in tumor of the medulla (Dercum[1]); in tabes dorsalis (Rennick[2]); in syphilis of the cord (Déjérine and Chiray[3]); in ataxia paraplegia (Bullard[4]); and in various other lesions of the cortex and brain substance. In most of the reported cases, however, that have come to autopsy or which were verified by operation, in which astereognosis has been a conspicuous symptom, the lesion was in or near the Rolandic region, in some cases involving this region only as in the cases of Verger[5], Walton and Paul[6], Langdon[7], Williams[8], Collins[9], Oppenheim[10], and Taylor[11]; in others a region anterior to the motor area, as in Dana's[12] case of sarcoma of the frontal convolutions; and in still others the parietal region, as in the cases of Diller[13], Mills[14], von Monakow[15], Dana[32], Wernicke[16], Lloyd, Walton and Paul, Dubbers[17], Spiller and Oppenheim, or in the parietal and Rolandic areas, as in the case of Verger. In Collin's case the astereognosis was apparently produced by a subcortical tumor in the middle of the Rolandic area, which had not entirely pierced the cortex.

Astereognosis was present in a case in which a hemorrhagic focus was found in the upper portion of the occipital lobe (Eskridge and Rogers[19]).

Lesions other than cortical have been described as causing astereognosis, as in the case of Mills and Keen[20], in which the corona radiata and parieto-occipital lobe were invaded by an endothelioma with cystic formation. The thalamus was the seat of disease in the case described by Verger[19].

In Bullard's[22] case a mass was found in the corpus callosum and neighboring portions of the brain. Bullard is of the opinion that astereognosis occurring alone suggests the presence of subcortical affections; when in association with other symptoms it may serve to confirm the diagnosis, but has not any importance from the standpoint of localization excepting in wide limits; namely, in cortical lesions, lesions of the thalamus, internal capsule, or lesions destroying the projection fibers running from these regions to the cortex. Prochazka[36] and others (Verger[40], Redlick[41], Abbe[37], Walton and Paul[39], and Dercum[38]) have also reported cases of hemiplegia in which astereognosis was present.

In the case reported in this paper it is interesting to note that partial hemianesthesia was present without motor paralysis, in view of the fact that this statement is contrary to the opinion of many authorities. Spiller[42] quotes Déjérine as stating that he had never seen lesions in the neighborhood of the supramarginal gyrus in which sensory disturbances occurred without motor manifestations. Müller (quoted by Spiller) is of the opinion that it is rare for sensory disturbances to be unassociated with motor weakness of the limbs exhibiting sensory symptoms. Spiller reported a case, however, which illustrates the fact that a cortical lesion may cause disturbance of sensation without motor paralysis. He concluded that the sensory centers for the limbs are distinct and separate. Spiller[43] is of the opinion that lesions of the parietal lobe cause ataxia, astereognosis, and other sensory symptoms in the limbs of the opposite side. He acknowledges the possibility that lesions in the motor area, especially in the postcentral region, may also cause these symptoms. He quotes Marinesco, who stated that astereognosis followed the removal of a part of the cortex in the upper leg center in a case of Jonesco, and in a second case of Jonesco, in which this symptom resulted from the removal of the face, arm and leg cortical center.

Morton Prince[44] considers it still an open question as to whether the stereognostic representation is in the postcentral or in the neighborhood of the postcentral gyri, or posteriorly in the parietal lobe. Spiller[45] believes with Prince that at present it is impossible to separate the functions of the postcentral and the parietal convolutions.

Most authorities accept the opinion that the motor area of the brain lies anterior to the central convolution, although Dana has stated that it was not positively demonstrated that the precentral convolution is the only motor area. Mills teaches that the motor and sensory areas are separate and distinct one from the other, and that the motor area is anterior to the central fissure.

Mills and Weisenburg[46] claim that there is an independent cortical area for the stereognostic sense, and that this area is subdivided in a similar manner to the motor and sensory areas. They place the sensory areas in the parietal lobe.

Mills has expressed the opinion that the cutaneo-muscular sensory area is situated posterior to the motor area surrounding it, and occupies the postcentral convolution, the anterior extremity of the superior and inferior portions of the paracentral and fronto-marginal gyri, and the contiguous portions of the precuneus and gyrus fornicatus.

Many authorities claim that the sensory centers are posterior to the motor region, and are situated in the superior parietal convolution, the gyrus supramarginalis, and the gyrus angularis (Vetter[23], Ferrier[24], Shaeffer[25], Horsely[26], and Flechsig[27]).

The experiments of Munk[28], Goltz[29], Tripier[30], and Hitzig[31], however, demonstrate that removal of the motor region in animals is followed by unmistakable disturbances of sensation. Dana[12] concluded from a study of four cases of his own and nineteen collected from the literature, that injuries and destruction of the Rolandic region caused disturbance of musculoarticular sensation.

According to von Monakow[32] lesions of the parietal lobes, *i. e.*, the gyrus supramarginalis, the gyrus angularis, and the superior parietal lobe, cause (1) loss of muscular sense on one side, hemiparesis, and unilateral muscular atrophy; (2) Jacksonian epilepsy in the opposite arm and leg; (3) conjugate deviation of the eyes; (4) mind-blindness; (5) hemianopsia; and (6) aphasic disturbances. Von Monakow further states that it is probable that lesions of the parietal lobes cause loss of muscular sense and other sensory changes, at least in the leg.

Alfred Campbell[33] states that lesion of the superior parietal gyrus is followed by sensory impairment confined to the lower extremity, and expresses the opinion that destruction of the Rolandic zones or the parietal lobe causes astereognosis.

Saville[34] has recorded a case of destruction of the right gyrus fornicatus, with loss of sensibility on the left side, and also in part on the right side.

Vetter[23] believes that beyond doubt the gyrus fornicatus is the chief center for originating sensations (Hauptempfangsstation), but that sensation and muscular sense are represented and coördinated in the motor areas.

Astereognosis as a localizing symptom is of value when it is the chief or only symptom, especially when it follows a trauma of the skull, and probably indicates the existence of pressure on the cortex posterior to the postcentral gyri on the opposite side. If paralysis of the opposite side of the body were present it would indicate that the lesion involved the motor areas representing the centers presiding over the affected muscles. In the latter case the skull should be opened over the motor area; in the former case, just posterior to it.

Notwithstanding the fact that astereognosis has been found in lesions involving the brain elsewhere than the cortex, in most of the cases reported the cortex has been involved posterior to the central fissure, or in the vicinity of the Rolandic area.

A report of the examination of the specimen of bone was made by Professor Allen J. Smith, University of Pennsylvania, as follows:—

Plate of bone-like tissue, flat and irregular in outline, but measuring in greatest length 6.3 cm., 2.5 cm. wide, and at the thickest part 0.8 cm. Upper surface smooth, the other uneven and somewhat bosselated; the general surface smooth and shining, and the mass of the consistency of bone.

Microscopic section shows structure of true bone. The specimen had been dried, and therefore the medullary substance is not well preserved, but at places in the spaces between the trabeculæ of hard, osseous substance, small amounts of practically normal-looking red marrow can be seen. The trabeculæ of bone are quite irregular in arrangement and size, some including definite Haversian canal systems, others merely showing lamellation parallel with the border. In the bit examined there is no appearance of other type of tissue which might have been the basis for ossification.

DR. MARTIN'S REMARKS.

From notes collected from various hospitals by Dr. Rhein, it seems that P. S. began his medico-surgical career in the Pennsylvania Hospital, to which institution he was admitted February 9, 1905, after a fall from a wagon, with the minor complaint of pain over the bladder, the major symptom of gross intoxication.

He next appears in the records of the Hahnemann Hospital, February 15, 1905, where it is stated that, as a result of having trodden on a loose board, he hurt his left eye, right shoulder and left chest, a curious distribution of lesions from a fall. It is observed that after having been in the hospital a few days this patient developed extreme restlessness and vertigo and convulsions which lasted from two to twenty minutes. In consequence of these vague and certainly not localizing symptoms, he was trephined over the right mastoid region, nothing abnormal being found. It is further noted that after the operation convulsions persisted as before, indicating that there was some chronic disturbance and that on his discharge he was greatly improved.

Then follows a period concerning which there is no documentary evidence. P. S. appearing next at the German Hospital in the middle of August with the statement that, having fallen from the third story of Wanamaker's building to the ground, he was treated in the Hahnemann Hospital for fracture of the skull, was not operated upon and was discharged in May, but in June entered the ear department of the German Hospital with discharge from the ear and epileptiform convulsions, and was operated upon. Because of the continuance of the epileptiform attacks he was transferred to the surgical department in the middle of August, the physical examination at that time showing "old cicatrices over right motor area and an area of slight depression." On August 15, the records state that this patient was operated on again by a surgeon who made a semilunar incision over the parietal and temporal regions of the right side over the depression, turned down a flap, trephined over the motor area and removed a button of bone. Noting that the meninges bulged, the dura was incised allowing free escape of arachnoid fluid. The wound was packed with iodoform gauze and dressed. The subsequent course of this patient was not satisfactory since at the end of September, 1905, he was again operated upon by another surgeon, who turned up a skin flap over the area already denuded of bone, incised the dura and evacuated about sixty centimeters of blood and soft grayish material, draining by means of a tube and iodoform gauze.

When next heard of, P. S. appeared at the Methodist Hospital on November 7, having stated that on September 15 he was again injured and afterward suffered from pain and a considerable amount of pus discharging from under the scalp, followed by epileptiform convulsions. The patient was again subjected to operation November 8. The indurated tissue covering the old trephine hole being cut away, and a considerable quantity of iodoform gauze being found beneath the dura; the dura thereafter was not sutured, nor indeed was the external wound closed. The convulsive attacks apparently were not bettered by this operation.

December 8 he was discharged to the Philadelphia Hospital. Thereafter this interesting history again is lost for a time until the patient reappeared at the Howard Hospital on April 1, 1906. His condition at that time is well described by Dr. Rhein. A rather extensive cicatrix of former operations, combined with a small area of ulceration, lying just above the ear, was clearly evident. A skin flap was turned up, the dura was separated from the periphery of the irregular opening in the bone placed above the ear, the result of former operations, and with a rongeur forceps the opening was rapidly enlarged upward although the dura and underlying brain substance appeared to be perfectly healthy, until the stereognostic center was reached, the direction for cutting being guided by localizing electrodes and the Rolandic fissure. At precisely the point indicated by Dr. Rhein there was found a disc of bone (See Figs.) lying loosely beneath the dura in contact with the brain substance; just above this bone the dura seemed quite normal and was not adherent to the inner surface of the skull; a dural separator, passed toward the middle line from the upper limit of the bone opening, showed, however, firm dural adhesions. The piece of bone was unattached, and seemed to produce practically no inflammation about it. The wound was closed, the dura was sutured and the external wound was closed without drainage. Healing was prompt and complete.

The noteworthy feature of this case which presented no technical difficulties, was the accurate localization of the foreign body on the part of the neurologist and the important part he played in completing the operation, since, on traveling upward and finding both brain and dura healthy, I should, in the absence of previous localizing symptoms, certainly have ceased further exploration in this direction had not the consulting neurologist had the courage of his convictions.

After a temporary complete cure of his astereognostic symptoms and apparently a complete cessation of his epileptiform attacks, he escaped from the hospital, appearing about a month and a half later at the Presbyterian Hospital where he was again subject to an operation through the bone opening made by his previous surgeons. Incision evacuated only a small quantity of bloody serum, and five days later, on removing the gauze drainage and introducing a probe, about two ounces of cerebrospinal fluid escaped. The patient died fifteen days later.

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RETARDED CEREBRAL DEVELOPMENT, DUE TO OTHER THAN CEREBRAL CAUSES.

BY ERNEST LAPLACE, M. D., LL.D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The development of a child's mind bears a direct ratio to the ability of the brain to receive and retain impressions. Retarded education, or even arrested education or development, may depend on causes intrinsic to the brain substance itself, or may result from reflex causes which so impair the nutrition and function of the brain as to disable it from receiving or retaining normally the impressions which collectively constitute normal educational development.

I wish to refer here to such physical defects as will directly or indirectly lessen the patient's mental power. I do not include within the scope of my present purpose such patients as are classed among microcephalics, idiots, or cretins. I refer chiefly to a class of children whose heredity is not shrouded in suspicion and whose environment likewise is good; but who, nevertheless, are backward and are mentally and physically below par. They are slow in retaining mental impressions, they show little or no tendency to learn how to talk, suffer with a variety of nervous phenomena, and have every evidence of imperfect nutrition. They are mouth-breathers, they present exacerbations of temperature which depress more or less the nervous system.

Examination of the head reveals nothing abnormal in shape or development. There is no history of meningitis. The careful physical examination of these children reveals with wonderful frequency the presence of three abnormal conditions; namely, postnasal and pharyngeal adenoids, tongue-tie and phimosis. These defects seem almost constant in boys; the exact ratio of harm resulting from each is not easily computed.

The pathological results of these deformities could be classified as follows:—

First, from the adenoids would result improper and insufficient aëration of the blood, resulting in insufficient combustion and imperfect general nutrition; also a blocking of the Eustachian tubes, thereby impairing the sense of hearing, which, from an improper understanding of sounds, results in sluggishness and lack of interest on the part of the patient.

Secondly, tongue-tie, resulting in the hampered condition of the tongue in its attempts to articulate. This inefficiency of the tongue, coupled with an uncertain sense of hearing, amply accounts for the listlessness of the patient in learning to talk.

Thirdly, phimosis, with the attendant reflex irritation of the nervous system and the general depression which soon follows, contributes further to lessen the power of nutrition, and becomes an added factor in the sum total of malnutrition, whose chief symptom is arrested or insufficient mental development.

I do not know whether the concurrence of these three physical defects has been dwelt upon before as a unit and as constituting a distinct class of patients, and therefore to be reckoned as a special pathological condition.

Within the last fifteen years, a number of these patients have come to my attention; and almost without exception, boys would present the combined defects above mentioned. The condition has not been found proportionately as frequently among girls, inasmuch as the tongue-tie and adenoids would be the only causative elements in the female sex.

When, therefore, no direct head lesion was found, the operations for adenoids, tongue-tie and phimosis were performed with results as gratifying as could be desired. The removal of these three impediments would allow the avenues of education through the senses complete function, general nutrition would improve, and the education of the child would follow with equal pace.

Each patient's condition varies a little, but the three physical impediments remain practically the same, and demand correction.

Many children suffer from the effects of adenoids, although the common symptoms are lacking. Their general nutrition is lessened, and this is a contributing cause to the resulting malnutrition. Too much stress, therefore, can not be laid upon the value of carefully watching a child's mental development as well as the physical development, for, as a rule, they go hand-in-hand.

Should nervous disturbances accompany the retardation of mental function, I urge that the three important points above referred to be carefully considered; that the child be examined for adenoids, tongue-tie, and phimosis. I believe that these three will often be found present together, and that, on their removal, a new start in the education as well as the physical development of the child may begin. This treatment, carried out in eighty-two cases, was followed by most encouraging results, and seems to confirm our suspicion that the strange coincidence of adenoids, tongue-tie and phimosis occurring in the same patient often contributes a factor in the retardation of mental progress.

TUBERCULOSIS OF THE SPINE.

BY JAMES K. YOUNG, M. D.,
Philadelphia.

(Read by title at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The surgical treatment of tuberculosis of the spine includes the operative treatment of the two most important complications,—the abscess and the paraplegia, and operations upon the diseased vertebræ.

The introduction of the aseptic method has removed one great source of infection in the opening of tuberculous abscesses, but the care required to maintain asepsis afterward is very great. This is a matter too little impressed upon the general practitioner. If asepsis is not maintained in a tubercular cavity after it is incised and cureted, the same danger of general septic infection with all its horrors exists to-day as in the time of Abernethy.

A certain percentage of abscesses occurring in tuberculosis have a multiple infection from within before they are incised. Most of these abscesses, which form very rapidly, are found to contain the streptococci or staphylococci at the time of operation.

In operations upon tubercular disease of the spine, or elsewhere, I prefer, where I can do so, to have a cover-glass preparation made and a culture tube inoculated from the pus as it flows from the incision.

As to the time when tubercular abscesses should be opened there is more unity of opinion now than ever before, both among general and orthopedic surgeons, that the abscesses if increasing in size should be opened under aseptic precautions.

While this is true in general there remains a small percentage of abscesses which upon examination will show tubercle bacilli in pure culture without cocci infection, and these may be allowed to remain for a time while apparatus is employed. This distinction may sometimes be made by aspiration and again by the clinical symptoms, especially the temperature, but aspiration is on the whole generally unsatisfactory in the treatment of tubercular abscesses since the contents are too thick to flow through even the largest aspirator. The pus is bright yellow in color, uniform in consistency, and free from shreds of decomposed fibrous tissue or blood, and without offensive odor. Then, too, while there is an evening rise of one half to one degree and a corresponding fall in the morning, the great ranges of temperature that accompany septic infection are absent and the fluid collects very slowly.

There is another important fact in the treatment of tubercular abscesses and that is the fixation of the spine after operation. I consider this most important. If time permitted I could refer to many instances where tubercular abscesses have been skillfully operated upon by surgeons and gynecologists, which have continued to suppurate for years because the spine was not fixed by an apparatus.

There is a certain amount of real danger to the individual in opening a tubercular abscess, especially if it be deeply situated and much dissection be required to reach it, and that is the danger of absorption of the pus by the incised surfaces. This the writer endeavors to avoid by searring the incised tissue with a Paquelin cautery before the sac is incised. Where this has not been done I have in some instances had general tubercular infection and meningitis occur, and where I have employed this original method there has been freedom from these complications and a satisfaction not enjoyed by other methods.

There is no general rule which can be applied to the abscesses in the different regions of the spine. In the cervical region the abscesses should be incised early in order to avoid burrowing down beneath the deep cervical fascia into the thorax. In the dorsal and lumbar region especially where they are external they should be excised early on account of the pain, with one exception which I will now mention. In lumbar abscess where the abscess has formed a sausage shaped mass in the iliac region, if the patient is under the observation of the physician, a delay is sometimes an advantage as it permits the abscess to elevate the fascia and advance forward toward the inner side of the anterior superior spine, and avoids a deep dissection in a region which would later become rapidly infected.

There is an accepted time when an abscess should be incised in this region, and, if this be allowed to pass, the abscess passes below Poupart's ligament and appears at the upper part of the thigh. In these cases I incise them at the latter point and also make a dissection above at the point where the abscess should have been incised if seen earlier, then with a long probe passed gently along the tract to a point external to the posterior superior spine of the ilium, counter drainage is established at this point just as it would have been had the operation been performed earlier.

The x-ray is exceedingly valuable in demonstrating the presence of abscesses and they may now sometimes be diagnosed by this means before the other clinical symptoms are sufficiently pronounced to render a diagnosis sure. The extent of the bone destruction is also clearly shown; and no operation for the removal of necrosed bone from the spine should be undertaken without first having an x-ray picture of the region to use as a guide. In the neck a lateral view will aid in locating the diseased area.

In the early stages the x-ray will be more valuable in the diagnosis of tuberculosis in adults since the cartilaginous character of the vertebræ in children renders the diagnosis more difficult. The x-ray picture is also valuable in localizing the diseased area in performing operations.

After the abscesses have been incised and drained there frequently remain sinuses which are difficult to close. These may sometimes be closed by curetage and where they are small by the use of irritants; as, pure tincture of iodin applied directly to the sinus. Fixation of the parts by means of a splint or brace will also frequently cause sinuses to close.

The presence of albuminuria is considered at the present time an indication for operation even if the sinuses are numerous. If the patient's condition is not greatly exhausted and the hemoglobin is not below forty-five per cent., curetage will often be followed by rapid amelioration of all symptoms.

The disposal of the pus discharging from the abscesses and sinuses is quite as important as the disposal of sputum from phthisical patients. Recent investigations have shown that in most abscesses the tubercle bacilli are present. The soiled dressings should be covered with a bichlorid solution and should afterwards be cremated.

A change of climate is of great value to patients suffering from spinal tuberculosis, and I have frequently seen recovery occur under these conditions where the patient would otherwise have died. For instance, one notable case of this kind, a child under my consulting care was given up to die by his attending physician, and from the anemia, the albuminuria, and the enlargement of the internal viscera which appeared to indicate amyloid disease, the patient's condition was apparently hopeless. A short residence at the seashore, however, changed the condition, and the patient is still living,—five years later.

The operative treatment for paraplegia in tuberculosis of the spine includes laminectomy, and personally I do not share the ultraconservative opinion which is held by the surgical profession at the present time in regard to this operation. I am confident that under certain conditions laminectomy is followed by the very best results. Where the paralysis has come on early and is persistent, without intermission, and particularly where there is contraction of the lower extremities, the operation should be performed earlier than is the custom.

In those instances where abscess is present and the paraplegia is intermittent, if the abscess can be drained by laminectomy, or if the carious bone in the vicinity of the abscess can be removed, the result will be beneficial. To instance a case of this kind, I have during the present year operated upon a fourteen year old girl for complete motor and sensory paralysis, with a restoration of function. Upon removing the lamina an abscess was found within the canal making direct pressure upon the cord. The drainage of this abscess has resulted in the restoration of function in the bladder and rectum and the patient can now walk.

In a small proportion of cases, amounting to about two per cent., most of which are in the cervical region, and where the paraplegia is due to bony pressure, laminectomy is of no value.

Since I have been using my original felt cuirass, which I presented to the Orthopedic Association in 1904 and which I had been using for two years previous to that time, to fix the head, neck, and body in cases of dorsal tuberculosis, all cases of paraplegia under my personal care have recovered. From this experience I am inclined to believe that paraplegia may be overcome in some cases by complete fixation and without operation.

Where it is possible to do so it is well to remove carious bone from the spine by curetage or with bone forceps. In this manner considerable areas may be removed and the recovery be greatly hastened. In lumbar caries I have been able to reach the anterior portion of the body of the vertebra and remove the carious disease from that region. It is sometimes possible to secure through and through drainage in the vertebra itself, but in my experience where the necrotic form of caries is present and sequestra can be removed the infection is a mixed one, the disease is more rapid in its course, and operations are less satisfactory than in unmixed tuberculosis.

DISCUSSION.

ON PAPERS OF DRS. WEBB, FELL, FRAZIER, FRANKHAUSER, RHEIN AND MARTIN, AND LAPLACE.

Dr. Charles K. Mills, Philadelphia: One thing particularly gratifying to me is the light which I received, not only during the hour in which these papers have been presented, but also during the last twenty-four hours in conversation with surgeons and physicians from the different parts of the state on the amount of good surgical work done throughout the state of Pennsylvania. Those of us who dwell in cities like Philadelphia and New York are too likely to have our attention centered on our own work, and to receive more than our due share of attention. The papers presented here by the gentlemen from Scranton, Wilkes-Barre, and Reading, and the notes of cases personally received from other parts of the state indicate that excellent diagnostic and surgical work is being done throughout the commonwealth.

It is hardly possible to go into detailed discussion of the different portions of the different papers. In abscess, as in tumor, we must of necessity make our final diagnosis with reference to surgical procedure upon two or three general symptoms, and upon the focal symptoms of the case. We can not depend upon external indications. With regard to the causation of cerebellar abscesses, it might be worth while to allude to some experiences of Dr. James Collier of England, and of myself. In certain cases of prefrontal tumor the brain is driven back into the foramen magnum, and cerebellar symptoms arise, probably as a result of compression and contusion. Cerebellar abscesses might occur in a somewhat similar fashion through *contrecoup* as the result of an injury to the anterior portion of the skull and brain.

Let me say one word about headache in connection with these cases; we can not depend upon localized headache in the diagnosis of either tumor or abscess. Headache localized in the cerebellar, or at least the occipital region, is more valuable diagnostically than similarly located headache in case of tumor. It is not necessary, I think, for me to say anything about complications. I was impressed, however, by the manner in which the gentleman from Reading differentiated the symptoms of extracranial and those of intracranial peripheral lesions and determined by this that the facial nerve was injured.

With regard to tumors, it is well known that I have for years advocated operation for brain tumors. I would be even more radical than my surgical friends, as they presented the subject here to-day. My belief from experience is that, in at least eighty or ninety per cent. of the cases, intracranial operations should be performed as soon as you have certain definite general symptoms and sufficient focal symptoms to enable you to diagnosticate the case.

Dr. Charles W. Burr, Philadelphia: I think all of us agree with nearly everything that has been said here this afternoon. I want to say, however, that we do not always think all the cases for which we recommend operation are curable. I think that was Dr. Mills' idea, and I am quite sure Dr. Frazier was a little less optimistic than he might have been as to the number (twenty per cent.) of cases of cerebral new growths that might be operated on. I am quite sure that the percentage number of new growths so situated that they can be operated on is more than twenty per cent. I do not wish at all to be understood as saying that twenty per cent. of the cases are curable.

The second thing of interest is what the future will bring forth, and along what lines progress will be made in the treatment of organic brain disease. There are two things which occurred to me; they are the technic of the surgeon and, most important of all, the ability of the nerve doctor to locate the seat of the lesion earlier than he does to-day. Surgery is about as good as it can be. The advance will have to be made by the medical man and the neurologist in diagnosing the case earlier than it is done to-day, localize the growth early. Because if we could tell when the new growth is small, if we could put our finger on it, the work of the surgeon would be less than it is. I confess I do not see what new symptoms we are going to discover, but the gentlemen who discover symptoms, the geniuses, will have to do that.

Finally, I suppose we will all agree, the thing to look forward to is neither surgery nor neurology, but the man who will discover an antitoxin, or something or other to destroy syphilis, to destroy tuberculosis and to destroy disease. They are the men who will cure disease.

Dr. William G. Spiller, Philadelphia: During the past year I was at a meeting where much pessimism was shown regarding brain surgery. I am convinced that many brain operations are improperly performed; but on the other hand, many are too long delayed. In a recent case, reported to the Paris Neurological Society, surgeons and neurologists hesitated for a time to operate because motor aphasia, right hemiparesis and Jacksonian epilepsy were present without headache or optic neuritis; finally they operated and found a tumor, but it was too late to remove it and the man died. Jacksonian epilepsy may be the only symptom of tumor. I had such a case a few years ago in which Dr. Martin operated. The area in which the tumor was situated was exposed by Dr. Martin, but the tumor was beneath the cortex, as we found at the autopsy. It is important to determine from the symptoms whether the tumor is on or beneath the cortex. It is possible in some cases to do this. If, for example, the hemiplegia develops rapidly and in all parts equally, the tumor is presumably subcortical.

A surgical condition to which I shall briefly allude is localized thickening of the skull. If I should have a case of diffuse thickening of the skull, I think I should, without hesitation, have a piece of bone taken out to relieve intracranial pressure. I performed a necropsy on such a case some time ago. The brain was much pressed up by the thickened bone, and if an opening had been made during life much benefit would probably have resulted. I have had three cases of localized enlargement of the skull with operation. The first occurred five or six years ago. The skull presented a hard growth over the motor region of the brain. An endothelioma was found in the bone and extending into the brain. Hemorrhage was profuse and the patient died a few hours after the operation. Tumors growing from the dura are not favorable for operation on account of their vascularity. Within the past few months I have had two cases of localized thickening of the skull. One patient had syphilitic enlargement of the bone of the frontal portion of the left side; he was aphasic and hemiparetic, and his condition was distressing. Dr. Frazier removed about two square inches of the bone, and since the operation the man's condition is wonderfully improved. He could not write before the operation, now he writes perfectly. I can not say his disease is cured, because it is possible he has syphilis of the meninges, but by antisyphilitic treatment it may be possible to prevent further symptoms.

Another case I have had recently was of a woman from Tennessee, who was struck on the left side of the head by a piece of iron which fell about twenty feet. She was in a pitiful condition; stupor was very marked, and she had repeated convulsions, said to be chiefly on the right side. She had some aphasia, not very marked, intense headache, and was said to have had optic neuritis. Her eyes were examined but optic neuritis was not found. She was completely blind in the left eye. Some of her symptoms were certainly hysterical. She was operated on and a piece of bone taken from the skull. She has gone home wonderfully improved. Such cases as these are most encouraging. In both instances the skull in the portion operated upon was about three quarters of an inch thick.

Dr. L. Jay Hammond, Philadelphia: My experience in surgery of the brain has been confined almost wholly to the acute inflammatory conditions growing out of diseases involving the middle ear, a subject that has always been attractive to me. From this source I have seen quite a number of cases of abscess, both cerebral, extradural and cerebellar. After repeated failures to diagnose these conditions from the recognized localizing methods, I have grown to regard a clinical picture, something like the following, as more reliable than the so-called localization symptoms.

Given a case of suppurating middle ear (usually chronic) beginning with headache that is more or less constant and increasing in severity and complained of greatest at night, having elevation of temperature, rapid loss of flesh with marked pallor, a tendency to lie with the head inclined toward the affected side, unfixed dilatation of the pupils (usually regular), flexion of the legs upon the thighs and the thighs upon the abdomen, a semi-consciousness (it being often possible to arouse the patient sufficiently to get intelligent answers early in the progress of the disease), and a tendency to throw the arm over the head. It is possible to demonstrate more often than not the presence of increased local temperature over the affected area, where the abscess has reached a proportion to cause decided pressure. There is a marked discrepancy between the pulse and temperature, the former being as low as 40, and seldom above 60. This group of symptoms, coupled with the absence of localized paralysis, completes a picture of what will prove more often than not to be cerebellar abscess.

Dr. William L. Rodman, Philadelphia: I am sure we have all enjoyed the several excellent papers which have been read, and I am tempted to say something about each. However, in five minutes that can not be done, and I must omit many of the excellent points made by the different essayists. I was very much impressed by the paper of Dr. Webb, inasmuch as I had seen a case very recently which had the same symptoms. It was not, however, a case of latent cerebral abscess, but one of a large tumor of the right half of the cerebellum presenting almost no symptoms at all. I was called to the interior part of the state to see a case with supposed gastric disease. The brain had not been suspected, although the case had been under the observation of two most excellent practitioners. The only symptom present was constant vomiting. Several weeks before I saw the patient, the symptoms had been at times sufficient to cause him temporarily to stop work; he had also had a staggering gait. He suffered partly from vertigo, and the vomiting was projectile in character. The case also confirms the remark made by Dr. Mills that pain is less valuable as a symptom in tumor than in abscess. I suspected the brain at once, believing that the stomach was not at fault, and, of course, declined to operate on the stomach. In less than a week, the patient died. The right half of the cerebellum was practically destroyed by a cyst. I have never seen a more beautiful specimen.

I fully agree with the points made by Dr. Fell in the second paper. Particularly he has shown most admirably the differential points between the several lesions we get in the middle fossa of the skull. I am led to speak of one point in connection with his case, that of subconjunctival hemorrhage, because of a case I have seen within a week. A patient with fracture of the anterior fossa, accompanied by subconjunctival hemorrhage, was brought into my service at the Jewish Hospital. Before admission there had been extensive hemorrhage of the lids, but up to the time of admission the conjunctiva was clear. The subconjunctival hemorrhage came later.

Certainly Dr. Frazier is not only to be congratulated on his paper, but on the most excellent personal results he has obtained. And while I agree with Dr. Frazier in the main and feel that nearly everything he has said is true, still I also feel that possibly in regard to Gasserian operations he is a little optimistic. I think we are hardly justified at the present time in saying that operation will be successful in ninety-five per cent. of the cases. It is only fair to judge of an operation by what its friends (those who have done a great many of such operations) think of it. If we take the results of Horsley, of Harvey Cushing of Baltimore, and of Frazier, who have done a great many of these operations, possibly the mortality would not be more than five per cent. I think, however, it will always be quite twenty per cent. and probably more than that for the average operator. So much am I impressed with the danger of the operation *per se* that I feel that in all cases the less serious or peripheral operations should be insisted upon. Undoubtedly the radical operation has a place in surgery; always has had and always will have, but it should be employed, I believe, only as a *dernier ressort.*

Dr. George W. Guthrie, Wilkes-Barre: My experience with brain work has been mainly with traumatic surgery, and I will say that the results in cases of acute injuries to the brain have been most satisfactory. On the other hand, in cases of acute injuries to the spinal column, they have been most unsatisfactory. It has been our experience that a man may come into the hospital with his skull crushed to fragments; it is possible to remove almost any amount of loose bone, found necessary, and the patient get well. We find a great many such injuries, usually very extensive fractures, received by men injured in the mines by a fall of coal. Some time ago I had a case in which the longitudinal sinus was opened, but we sewed it with catgut, and had no bad results. With that kind of work the results have been very gratifying. But in cases of injuries to the spinal cord, with fractured vertebræ, the results have not been gratifying. I took occasion in my address on surgery, in 1899, to make reference to this. My experience has been confined to five cases of spinal fractures, and I must say that in all of the cases, I think none have been benefited. And why? There is some reason. It has been stated here to-day that, when the spinal cord is severed, there is no chance of its being restored. If there is simply a hemorrhage into the spinal cord, time will absorb that. I have had several patients recover where there was complete paraplegia from traumatism, with paralysis of the sphincters, by putting the patient in a recumbent position with extension and counterextension. We get better results in the cases we treat in this way than we do where we operate. For brain abscess, my experience relates to the traumatic variety altogether, and these cases are always septic. I remember a case about a year ago, in which I opened the abscess over the speech center. The aphasia disappeared and the patient talked well for a time. But he was septic and died of sepsis. That is natural, for those cases are necessarily septic when we get them. I have seen three cases, all of the patients operated on with very gratifying results at first, but they all died afterwards from sepsis.

In regard to epilepsy, I have operated several times, with immediate good results, but it seems to me that almost anything you do for epilepsy is followed immediately by good results which, unfortunately, are not permanent.

Usually in acute injuries of the brain, no matter how serious, if the patient does not die immediately, he will get well.

Dr. Webb, closing: I had hoped that in the discussion of my paper I might have elicited some information as to the real value of traumatism in brain abscess. The effect of traumatism in producing brain abscess is very remote. If it is a factor, as we sometimes suppose, the effects are delayed as in no other instance. We can accurately trace the relation between traumatism and malignant disease, or any other disease, such as immediate abscess formation, but the relation between traumatism and brain disease is absolutely different from what it is in any other part of the body. In other words, traumatism in the brain will give latent abscess; whereas, in other parts of the body, if there is to be an abscess at all, it will be immediate. So, as I said in my paper, the crucial question is to determine the real significance of traumatism. It is possible there may have been some latent foci of infection elsewhere, and that this other infection brought on cerebellar infection as a result of alcoholic debauches, not necessarily caused by them while intoxicated, but caused by a lessened power of resistance.

Dr. Fell, closing: I will bear out what Dr. Guthrie has said was his experience with regard to traumatic surgery of the spine. I have always been at a loss to account for the difference in results we have obtained from those they have obtained in the Schuylkill region. I do not know whether it is a difference in the condition causing them that brings about less favorable results, or whether the pressure comes down on the spinal column more directly in the Wyoming region than it does in the Schuylkill region. I can bear out what the Doctor says in regard to fractures of the skull. We can have almost any degree of fracture of the skull and the man will get well. We had one case in which the frontal bone on the right side was crushed in, in which the frontal lobe was penetrated and considerable brain matter lost. By simply taking antiseptic precautions and packing with iodoform gauze, this man made a good recovery, the only result of the injury being a change in his disposition. It is now nineteen years since the accident occurred. Prior to the accident he had a very good disposition; was a good father, loved his family and lived happily in it, and was a good, steady worker. After this accident he began to go on sprees, and to beat his wife. She said, "I can bear with John; he was a good man beforo the accident happened." But she went to her grave long before he will go to his.

Dr. Frazier, closing: I have nothing to add to what has already been said except, perhaps, to correct a misunderstanding on the part of Dr. Burr of a remark which I made as to the percentage of operable cases of brain tumor. I did not intend to say, nor did I wish to be understood, that only twenty per cent. of the cases of brain tumor ought to be operated upon, but rather that in only twenty per cent. of the cases was the tumor so situated and of such a nature that it could be exposed and removed. That is, the tumor must be in the region between the skull and the cortex, and it must also be encapsulated. I think it is a mistake to attempt to remove infiltrating tumors, because I am sure the attempted or partial removal of such tumors will almost surely be followed by more rapid growth.

While the paper on fractures of the base of the skull was being read, I was reminded of an unusual case in the person of a young boy, sent to the University Hospital last year by Dr. Miller; he had been struck on the back of the head several weeks before by a rolling log. He suffered at the time from symptoms of mild concussion associated with vomiting and headache. There was evidence of pressure or involvement of the third, fourth and sixth nerves. When he arrived at the hospital, two weeks after the accident, the symptoms of concussion had entirely disappeared, but the ocular phenomena resulting from pressure or invasion of the three basal nerves was still present. The expectant plan of treatment was carried out, and the ocular paralysis gradually subsided.

Dr. Rodman has taken exception to my estimate of the mortality following operations on the Gasserian ganglion. The estimate which I made is based upon the results of those who have enjoyed a large experience, and have made this subject more or less a special study. Of course, if one would base the statistics upon the results of all surgeons throughout the country, no matter whether they have operated in one case or many, the mortality rate would be considerably higher. With regard to the treatment of traumatic lesions of the brain, particularly as to fracture and hemorrhage, the indications for operation are well defined. We are all of one mind that the fragments of a depressed fracture should be elevated and the clots from hemorrhages should be removed. These are conventional surgical procedures. We should extend the field of surgical indications to include cases of contusion and concussion, in which the resulting edema gives rise to such increased intracranial pressure as may cause a fatal termination. It seems to me in cases such as these that we are perfectly justified in performing an operation which will, by relief of tension, tide over the critical period until the edema subsides and the normal circulation is restored.

Dr. Frankhauser, closing: I may state briefly that in all these operations I advised the early and complete opening of the mastoid in order to establish drainage near the point of the infected sinuses wherever they may be; then these complications may usually be avoided.

Dr. Laplace, closing: With regard to the so-called latent abscess of the cerebellum, I believe this organ would stand considerable disturbance before evincing any manifestation. I can recall a case of so-called aneurysm of the brain; Dr. Deaver ligated the internal carotid on one side, and six months afterward I ligated the other. The patient died about a year ago, and the postmortem showed a large angioma of the cerebellum. There were absolutely no symptoms referable to the cerebellum. I believe we may have the beginning of tuberculosis itself in the cerebellum, with no symptoms at all until the lesions have grown to a great size.

In regard to contusion of the brain, whenever there is any evidence of compression the skull should be opened up and the compression relieved.

About six months ago a patient in Harrisburg was struck on the head by a locomotive. This was soon followed by blindness. He was taken to the Medico-Chirurgical Hospital, and I operated on him for decompression. He had been blind for three days prior to the operation, and in twelve hours afterward his sight came back. So I think in injuries of the brain with contusion, there is indication for operation.

We should also remember the possibility of hemorrhages being caused by contusion on the opposite side. It should always be borne in mind in trephining that it is often necessary to trephine on both sides in order to produce results.

In injuries of the spinal cord with paraplegia, I agree with Dr. Guthrie, that I would rather let the patient take the chances of recovery without operation, than by cutting down upon the spinal cord, so discouraging have been our results. The tissues below being paralyzed, infection invariably follows.

I believe that a very judicious selection should be made of cases for operation.

AN ANALYSIS OF THE KIDNEY CONDITION OF EIGHT HUNDRED CASES OF SCARLET FEVER TREATED WITH ROUTINE DOSES OF CHLORAL HYDRATE: THE ANALYSIS CONTRASTED WITH SEVEN HUNDRED FIFTY-SIX CASES HAVING THE USUAL REMEDIES.

BY B. FRANKLIN ROYER, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

During the latter part of 1904 we began a study in the Municipal Hospital to determine the value of chloral hydrate in the treatment of scarlet fever. As long ago as 1896 Dr. James C. Wilson advocated routine doses of this drug in the treatment of scarlatina. Dr. Wilson believes that he secures an increased diuresis thirty-six to forty-eight hours after its administration has been begun. He thinks that in some way chloral protects the functionating part of the kidney tissues, that the nervous symptoms are greatly modified, that the itching is allayed and that the patient is made more comfortable.

In beginning this study we were skeptical as to the value of this drug in scarlet fever.

We believed that rest in bed with good nursing, simple diet, and large quantities of pure water were the only useful adjuncts to be used routinely. We fully expected to prove chloral hydrate valueless in the treatment of this disease. A few weeks' trial, however, convinced us that Dr. Wilson's claims were for the most part easily proven, and that chloral hydrate did appear to be the most useful remedy yet advocated in the treatment of scarlatina. Dr. Wilson's claim that the patient is made more comfortable is plainly evident to those who use chloral; so too with his claim for the amelioration of the nervous symptoms and the control of itching.

We next turned our attention toward danger signals, more particularly toward evidences of circulatory depression. We were bound to the universal teaching that chloral hydrate is a circulatory depressant and dangerous in asthenic conditions. We naturally expected to find this drug dangerous in many cases. After having treated nearly a thousand patients with doses of sufficient size to produce light somnolence, we feel that chloral hydrate does not materially depress the circulation. We believe that in no instance did the drug act clinically as a serious depressant. We have given it to patients greatly prostated on admission and have discontinued it after a few doses were given because of our prejudice against the drug and of our early training. After having a larger experience we rarely discontinued its use no matter what the degree of depression might be.

One claim made by Dr. Wilson, however, we were unable to confirm; viz, that of early diuresis. We undoubtedly do get an increased flow of urine twenty-four to forty-eight hours after the patient has been committed to our care. We meet with this same increase in flow of urine in patients treated by other remedies. We are inclined to attribute this increased flow of urine to better nursing, to the systematic use of water in definite quantities, insisted upon whether a patient wants it or not, and to the greater ease with which liquids are swallowed as the angina subsides.

The particular study undertaken at this time relates to the kidney condition met with in the postfebrile period. We have studied eight hundred cases which were treated with routine doses of chloral hydrate given in quantities sufficiently large to produce light somnolence and have continued its administration in this dose five or six days after the fever subsided. A series of 756 patients treated by the usual remedies (a few of them perhaps having a dose of chloral to quiet extreme restlessness at night, most of them, however, having no chloral at any time) were analyzed in exactly the same way. The patients in each series were parallel cases as nearly as we could select them. All histories were excluded in each series where other infectious disease or other serious illness was combined with scarlet fever. Three patients died in the chloral series, and four died in the usual remedy group. We find that in the febrile period no material difference was found in the number of those having either mild, transient, or severe nephritis. In the postfebrile period it will be seen that of the 800 having routine doses of chloral hydrate the percentage of those having postfebrile albuminuria is 4.25 per cent. as against 5.68 per cent. in the series treated without chloral; in those having a transient postfebrile nephritis 3.5 per cent. as against 5.29 per cent. without chloral, and of those having severe postfebrile nephritis 2 per cent. as against 2.38 per cent. without chloral; in the total of all forms of postfebrile nephritis 5.5 per cent. in those having chloral, as against 7.76 per cent. in those not having chloral, or the apparent total saving of 2.17 per cent. of postfebrile nephritis.

It will be seen in the first table presented that antitoxin was used in many cases of

POSTFEBRILE CONDITION OF KIDNEYS—CHLORAL SERIES.

Treatment.	Postfebrile Albuminuria	Postfebrile Transient Nephritis.	Postfebrile Severe Nephritis.
Chloral hydrate alone 22	0	1	0
Chloral hydrate and antitoxin (Immunizing or larger dose.) 26	2	0	0
Chloral hydrate and usual remedies. 221	12	10	1
Chloral hydrate, usual remedies, and antitoxin 531	20	17	15
Total chloral hydrate	34	28	16

Total number treated with chloral 800
Total number developing postfebrile nephritis 44
Percentage developing postfebrile nephritis 5 5

POSTFEBRILE CONDITION OF KIDNEYS—USUAL REMEDY SERIES.

Treatment.	Postfebrile Albuminuria	Postfebrile Transient Nephritis.	Postfebrile Severe Nephritis.
Usual remedies alone 526	28	26	13
Usual remedies and antitoxin 230	15	14	5
Total having usual remedies 756	43	40	18

Total number having usual remedies 756
Total number developing postfebrile nephritis 58
Percentage developing postfebrile nephritis 7.76

each series tabulated. There may be those who believe that antitoxin irritates the kidneys and that it may even cause nephritis. We have therefore separately classified those having antitoxin in the succeeding table. It apparently demonstrates that nephritis is a little more frequent in those patients having antitoxin.

CLASSIFIED IN ANTITOXIN GROUPS.

Treatment.	Total.	Total Nephritis.	Percentage.
Chloral hydrate .... 22 Chloral hydrate and usual remedies 221	243	12	4.93
Chloral and antitoxin .... 26 Chloral, other remedies and antitoxin 531	557	32	5.76
Grand total	800	44	5.50
Usual remedies 526	526	39	7.43
Usual remedies and antitoxin 230	230	19	8.26
Total	756	58	7.76

Of this series 243 had chloral hydrate and usual remedies, 12 developed nephritis (a percentage of 4.93 per cent.); 557 had chloral and the usual remedies, and were either immunized or given larger doses where attacks were anginose, 32 developed nephritis (a percentage of 5.76 per cent.). Of those not having chloral 526 were given the usual remedies alone, 39 developed nephritis (a percentage of 7.43 per cent.); 230 had the usual remedies and antitoxin, 19 with nephritis (a percentage of 8.26 per cent.).

Here just a word of explanation: It has been our custom at the hospital to give a dose of 5000 units or more of diphtheria antitoxin to all anginose cases of scarlet fever. In these antitoxin groups we have all the severe cases of anginose scarlet fever. The number in each group not having antitoxin is practically *nil*. It is from the antitoxin group then that nephritis is to be expected. This explanation is made so that antitoxin may not be misjudged.

It is believed that some inquiry as to the day of disease when postfebrile nephritis most frequently develops might be of interest. The third table presented shows the day in the disease when nephritis may be anticipated. The period of greatest danger is shown to be the period from the twentieth to thirty-second day, or the third week and the early part of the fourth week.

A further division of the 800 patients having chloral shows that of the sixteen having severe postfebrile nephritis, two had febrile albuminuria, one transient febrile nephritis and three had severe febrile nephritis, one of whom had severe nephritis on admission. In two patients of this group the nephritis extended to the postfebrile period. Eleven patients of this group escaped kidney symptoms in the febrile period and are classified as scarlatina simplex. Five are classified as scarlatina anginosa. Fifteen of this group showed hyaline and granular casts in the urine, five epithelial casts and two blood casts. In three marked edema is noted; in

NEPHRITIS IN CHLORAL SERIES.

Classified to show day of disease postfebrile nephritis developed.

		3d week 12							4th week 13							5th week 5							6th week 4					
Day of Disease	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
No. developing nephritis	*5	1	1	0	0	2	3	0	6	1	2	2	5	2	1	2	0	1	0	0	2	1	1	0	0	2	1	0
						Period of Nephritis Postfebrile.																						

*Two continued from febrile period

three puffiness about the eyes alone is noted. In three the notes show the quantity of urine to be scant; in ten the quantity is fair and in three a good quantity is noted. In three patients in this group albumin was found from one to three days before casts appeared.

Of the twenty-eight having transient postfebrile nephritis seven had febrile albuminuria. Nineteen of this group had scarlatina simplex, eight had scarlatina anginosa and one had scarlatina hemorrhagiea. All of this group escaped nephritis during the febrile period. In twenty specimens of urine hyaline casts were noted; in twenty-five, granular casts were found; in four, epithelial casts were seen; two showed blood casts and one had leukocyte casts. Two patients were noted as having marked edema, two puffiness about eyes. One showed scant urine, two fair quantity, twenty-five good quantity, one of which had polyuria. Five of this group showed albuminuria from one to three days before casts were demonstrable. In two of this group a trace of albumin could be demonstrated for fifteen days before casts were found.

The following conclusions may be drawn:—

First, chloral hydrate is of distinct value in the treatment of scarlet fever, and when used in doses of sufficient size to secure light somnolence does not seem to be a circulatory depressant.

Second, chloral hydrate ameliorates nervous symptoms better than any remedy yet suggested in the treatment of scarlatina.

Third, chloral hydrate allays the itching of the skin often found annoying in scarlet fever.

Fourth, when chloral hydrate is given routinely during the febrile period and for some days thereafter postfebrile nephritis appears to be less frequent.

Fifth, this study would seem to justify the more extended use of chloral in the treatment of scarlet fever, and a more detailed study as to how it acts on the kidney itself.

DISCUSSION.

Dr. John E. Rigg, Wilkinsburg: I desire to congratulate the author of the paper upon the most excellent presentation of the subject. It is one that for the last twenty years has occupied my attention to a considerable degree. I have never presented any reports, but in a general way I can endorse the findings of the doctor throughout. I have found scarlet fever to be less severe, less fatal, and less liable to complications when chloral hydrate has been used than when any other form of treatment was employed. I do not consider that the appearance of albumin early in the disease is an evidence of kidney complication. But the appearance of albumin from the fourteenth to twenty-fifth day means an involvement of the glomeruli of the kidney and is the type of nephritis which we so much dread. The later it appears the more severe the condition is likely to be. One point which the doctor did not bring out is that low specific gravity is the earliest indication of the approaching of this severe type of nephritis. This alone is not sufficient to base a diagnosis upon, but is a warning that all precautions should be taken.

Dr. Royer, closing: I might say that, in making my diagnosis of nephritis, in no case did I make it on a trace of albumin alone, nor did I diagnose nephritis in the febrile period from one or two purely hyaline casts and a trace of albumin. Epithelial, granular, or other casts with albumin, with or without the symptoms of nephritis, was in every instance classed as nephritis. I analyzed the febrile kidney condition, but noted nothing of special interest. We had to work out the dose of chloral for each individual case. Sometimes we would find a child getting a little more somnolent than desired and we then reduced the dose, graduating it to the age and size of the patient and individual susceptibility. A child of ten would usually receive four grains every third or fourth hour.

UNUNITED FRACTURES.

C. W. Sharples, Seattle, Wash. (*Journal A. M. A.*, October 28), thinks that local conditions probably have more to do with ununited fractures than do constitutional states, but just what these local conditions may be it is difficult to say. He does not think that interposed tendon or muscular fiber can play much part. In compound fractures, the greater damage to the periosteum would be likely to cause delayed union, and hemorrhage, by delaying the process of granulation essential to callus formation, would also have its effect. A colleague, Dr. Yocum of Tacoma, has called his attention to the better results he had obtained in ununited fractures by the use of drainage, and he suggests that drainage may act as the seton did in the hands of the earlier pre-antiseptic surgeons who reported strikingly good results with it in these cases. Other causes of non-union are said to be tight bandaging and the too early use of the limb. Interference with nerve supply is also likely to cause delayed union, and pregnancy, lactation and syphilis have also been mentioned as causal factors. Medical treatment can only be useful in toning up the deteriorated general condition, though some claims have been made for thyroid treatment in these cases. Of course, in case of specific infection treatment for that condition is advisable. Next to medicinal treatment in simplicity is putting the limb up in a strong plaster cast and allowing the patient to use it to a certain extent from time to time. He has seen good results from this treatment, and believes that, before any operative measures are undertaken, it should be tried for a period of at least three months, in the hope of obtaining some irritative reaction that will cause bony union. Failing in this, some operative treatment is demauded. Sharples thinks an open incision should be avoided, if possible, until after other means have failed, but if necessary almost any method can be used that will bring healthy bone tissues into apposition. To obtain perfect fixation, he suggests the possibility of making a shoulder in the overlapping ends of the bones as is done in joining heavy timbers, and then pegging or wiring the parts together. The results seem to be about the same whether the simplest or the most complicated method is employed. Not all patients will recover, no matter what care and attention they receive.

FRENCH SCALE FOR CATHETERS ADOPTED.

At a meeting of the American Surgical Trade Association held in Philadelphia, June, 1906, it was resolved that after January 1st, 1907, the trade adopt the French scale for all catheters, bougies and sounds.

A committee was appointed for the purpose of getting up a proper and accurate French scale card, and the same will be mailed to you.

Every physician will see the importance of this step as you are all acquainted with the annoyance of having catheters, bougies and sounds, and other instruments marked in American, English or French numbers.

You are requested from above date to use only the French scale in ordering such goods and when no scale is specified, orders will be filled by the French scale.

SUBCONJUNCTIVAL SALT INJECTIONS.

S. D. Risley, Philadelphia (*Journal A. M. A.*, Aug. 12), reports his personal experience with subconjunctival salt solutions which are, he says, always innocuous and often markedly beneficial in various pathologic eye conditions. Illustrative cases are reported of its use and value in corneal abscess, keratitis, hemorrhage and suppuration of the retina, etc. The mode of its beneficial action, Risley thinks, is through the well-known protective influence of the serum albumin poured out into the aqueous humor. It is probable the injection of neutral saline solutions of low specific gravity dilates the clogged channels of exit and dilutes their contents, thus hastening the flow of the lymph and albuminoid substances through their normal channels, and that this fluid is replaced by a fresh supply still richer in albuminoid substances carrying a fresh nutritive supply to the tissues. Recent observations have led him to think that similar good effects can also be produced by the prolonged application of saline stupes at body temperature directly to the conjunctival sac.

The Pennsylvania Medical Journal.
PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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All communications should be addressed to the Pennsylvania Medical Journal, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

Athens, January, 1907.

It's not your business by your face to show
All that your patient does not want to know:
Nay, use your optics with considerate care,
And don't abuse your privilege to stare.
—*Dr. Oliver Wendell Holmes.*

THE BLOOD PRESSURE IN CASES OF PARETIC DEMENTIA.

It has been thought that a study of the blood pressure might prove useful in the diagnosis of paretic dementia. The preponderance of opinion inclines toward the view that the pressure is low in the later stages of the disease, although the evidence adduced is not altogether conclusive. With the view of determining this point on the basis of personal knowledge, Dr. G. L. Walton (*Journal of the American Medical Association*, October 27, 1906, p. 1341) made an examination of 108 male patients, and he has found that the average blood pressure in cases of paretic dementia is on the whole high, probably as a result of atheroma and its cardiac and renal accompaniments. On the other hand when atheroma, cardiac enlargement and renal disease are absent the average blood pressure appeared to be somewhat lower than that of health, although the variations were so marked that the pressure could not be said to be uniformly low. Accordingly it will be seen that this test is not likely to prove of great value in the differentiation of paretic dementia from other disorders of the nervous system. The observations tended further to indicate that the excited states of paretic dementia are as likely to be accompanied by high as by low pressure, that mental depression is accompanied by high oftener than by low pressure, although it is not incompatible with a low pressure, and that while the average pressure in the presence of euphoria is perhaps somewhat lower than in the presence of other mental states accompanying paretic dementia, it is not inconsistent with high blood pressure or with pronounced atheroma, with its cardiac and renal accompaniments. E.

OSTEOPATHIC LEGISLATION FOR DISTRICT OF COLUMBIA.

Senate Bill, No. 5221, introduced by Senator Foraker, Ohio, has passed the U. S. Senate and is now before a committee of the House of Representatives of which the Hon. A. J. Barchfeld (Penn.) is chairman.

The objections urged against the bill by the Medical Society of the District of Columbia and ratified by the National Legislative Council of the American Medical Association are as follows:—

"*First.*—The bill, if enacted, will lower all existing medical educational standards and thus defeat the very object for which medical practice laws are provided, viz., to guard the people against the effects of ignorance and incompetency in the practice of medicine.

"*Second.*—The bill seeks to legalize and regulate the practice of osteopathy without defining what constitutes the practice of osteopathy, and until this is done Congress can not undertake to legislate intelligently.

"*Third.*—The bill, by establishing special provisions for a special group of physicians as distinguished from other groups of physicians, contemplates class legislation."

Every physician is requested to forward at once his protest to the Hon. A. J. Barchfeld, House of Representatives, Washington, D. C., and also to secure on such protests the signatures of prominent citizens and politicians. What is done must be done at once. If you make no effort along this line, let your voice never be heard croaking about the lack of influence of the profession. Blank petitions to be signed in protest of the passage of this bill will be furnished by the writer on request.

The osteopaths are earnestly soliciting signatures to their petitions, claiming that all they ask is to have the same chance as others. They are, however, seeking very much more. Physicians now are required to have a good preliminary education before spending four years in a medical college in order to make them eligible to an examination for licensure to practice medicine. The osteopaths ask that those now practicing osteopathy be licensed. This is class legislation of the worst kind. Much more reasonable would it be for qualified dentists or veterinary surgeons to ask to be legalized as practitioners of medicine.

The Pittsburg Dispatch for July 29. 1906, contained the following advertisement:—

"PERSONAL.—All persons practicing osteopathy in Pennsylvania (with or without a diploma), who are desirous of having a liberal law enacted, write at once to The American Osteopathic Union, 600 and 601 Lewis Block, Pittsburg."

The words "liberal law" and "with or without a diploma" explain the activity of these people in circulating petitions, and their readiness to raise a large fund for legislative purposes. Before this article will be read a bill will have been introduced into the Pennsylvania Legislature to legalize the practice of osteopathy. Success in the District of Columbia would give them a precedent sufficient to carry through their bill at Harrisburg. S.

INVESTMENTS.

A mining broker in Colorado is authority for the statement that physicians are the most liberal patrons of mining investment schemes. All circulars regarding investments received by the writer find their way to the waste basket unread, and yet he has made some poor investments. Some years ago a few shares were taken in a pharmaceutical company of recognized merit. The corporation is still furnishing first class products but is paying no dividends upon its preferred stock. The large holders of stock are probably receiving good salaries and are, therefore, more fortunate or less unfortunate than those who have but small holdings.

A bill to be submitted to the legislatures of the different states has been drafted by those interested in legitimate mining investments, which, if it becomes a law, is hoped to lessen the amount of fraudulent soliciting of investments for stocks and bonds.

Many have made money in mining stocks and investments and a respectable number have become rich, but where one has made money, many have lost a part or the whole amount invested. Few physicians can afford to lose their hard earned money, and those who are wise will consult some conservative friend versed in financial investments before buying stocks or bonds. S.

A NEW "CURE" FOR ALCOHOLISM.

A new "cure" for alcohol and drug addiction emanates from Philadelphia. The following letter signed by the secretary of the "cure" association, who appends M. D. to his name, has been received by Pittsburg physicians.

"Dear Doctor:—

"During the past summer an institution was established in this city for administering the ———— Treatment for the cure of liquor and drug addictions. Many cases have since been treated and it is a most interesting fact that not one failure has resulted. Those cured may be easily seen or communicated with.

"The ———— Treatment has been practiced by Dr. ———— in a private sanatorium for the past fifteen years with unvarying success and his cures have been permanent; that is, the positive nausea occasioned by the taste or even smell of stimulants has lasted a sufficient number of months to prohibit the patient's drinking even if he would. The craving itself has been eliminated permanently and for all time.

"The burden of proof lies with us before the patient pays one dollar. No charge whatever will be made for either board or treatment until the patient willingly subscribes to the fact not only that the craving is eliminated but that liquor or drugs are absolutely distasteful,—that the entire system revolts at the thought of them.

"Doubtless you have one or more liquor or drug users in mind whom we can cure, and we hope you can see your way clear to give the writer an opportunity to consult with you on the subject. We would like to have you meet or write to some of those who have been cured. We should expect of course to arrange a consulting fee with you based on the importance of the case.

"The treatment is simple; there are no injections, no long periods from business, no attempt to trifle or drag out the period. It is all accomplished in liquor cases inside one week, and the nerves are left in a condition to properly withstand the loss of stimulant after the cure is effected. (Drug addiction cases require from one to two weeks.)

"We believe, honestly and sincerely believe, that we have an unfailing cure. If we did not we would not say to you as we do that, no matter how serious the case may be, your patient will have board and that will be inside one week.

"May we not hear from you either by letter or 'phone?

"Yours very truly,"

It is sad to think that any physician would entrust a patient to such an association. Doubtless some will do so, but let us hope that none of our members will be thus misled. How such a circular might attract laymen is easily conceivable since it promises what inebriates desire,—a cure that will be (1) quick, (2) sure, ((3) permanent, and (4) unattended by pain or discomfort or danger. Then the hints, that other "cures" prolong the time and expense of the patient unnecessarily, will doubtless help. Now that a cure is promised in *one week*, it is to be expected that the next secret "cure" will advertise "to cure" in two or three days in order to advance upon this one. The apparent fairness in money matters will appeal to many. No pay until the patient himself says he is cured, would be very amusing if it were not so sad. The buoyant hope and confidence of the inebriate, who is well over a debauch, is well enough known to the proprietors of this "cure" to make the proposition a safe one.

All this again brings to the minds of conscientious physicians this question: "Where shall I send patients addicted to the use of drugs or alcohol?" Surely it is not enough that he shall warn the patient *against* the various secret "cures" or shrewd proprietors. He ought to be in position to advise the patient, or his friends, *where he shall go.*

Let us hope that a public hospital for inebriates, free from fakery, secrecy or faddism, may be established in this state, to which physicians can send patients. The state itself should build and operate a hospital of this kind. It is earnestly hoped that physicians throughout the state will coöperate with the Inebriate Hospital Committee of the state society in its efforts to induce the Legislature to create such a hospital. D.

Editorial Notes.

The Military Surgeon.

Beginning with this month, the *Journal of the Association of Military Surgeons* assumes the name of "*The Military Surgeon*, retaining the old name as a subsidiary title. Those who are familiar with this excellent journal, edited by Major James Evelyn Pilcher, Carlisle, will agree that this monthly is fully entitled to as broad a name as may be found for it. Every one interested in military or general surgery should read this publication. S.

"The Suppression of the Physician in the Aid of Quackery."

Special attention is called to the report of the Philadelphia County Medical Society for December 12, which appears in this number. More than one of our members are referred to in the symposium on the "Suppression of Quackery" and it will be well for each one of our readers to see what is said about himself. It is well for us to see ourselves as others see us. If any member who has been mentioned feels himself aggrieved, he may have the privilege of stating his case in the next number of the JOURNAL. S.

American Physiotherapeutic Association.

Physicians who are interested in the study and legitimate practice of the physical (drugless) therapeutic methods, notably electrotherapy, phototherapy, mechanotherapy, hydrotherapy, suggestion and dietetics, are invited to join the American Physiotherapeutic Association. Address the secretary: Dr. Otto Juettner, No. 8 W. Ninth St., Cincinnati, Ohio. S.

Changes in Membership of County Societies.

The following new names have been reported from December 4, 1906, to January 5, 1907: Clara S. Keiser, Raymond K. Weber, Reading; Francis F. Borzell, Cressman; Morris P. Boyle, Glenside; Walter H. Brown, Richlandtown; Charles N. Burkhardt, Blooming Glen; Curtis Clyde Eves, George School; Samuel A. Leinbach, Quakertown; Samuel E. Ralston, Zelienople; Ira D. Bowser, Rathmel; Walter K. Baer, John T. Hope, Lancaster; Harry S. Dissler, Schoeneck; Joseph C. Jenkins, Lititz; John M. McCanna, Mt. Joy; C. M. Porter, Hillsville; J. M. Gwinner, Centralia; Alexander Marshall Cook, South Canaan; W. Craig Byers, Webster; Morgan J. Cramer, Oliver J. Kregar, Monessen.

Robert C. Craig (University of Virginia, '96) of Pittsburg died in Atlantic City, November 14.

Volney Homet (Jefferson Medical College, '56) died at his home in Wyalusing, December 27, aged 75.

Jacob L. Zeigler (Jefferson Medical College, '44) died at his home in Mt. Joy, recently.

Augustus C. Bournonville (University of Pennsylvania, '47) died at his home in Philadelphia, December 3, aged 80.

William H. Dingee (University of Pennsylvania, '06) died at the home of his father in Philadelphia, December 30, after a short illness, aged 32.

John Greer Smith (Medico-Chirurgical College, '98) died at his home in Philadelphia, November 30, from tuberculosis, aged 32.

Joseph D. Nash (Jefferson Medical College, '65) died at his home in Philadelphia, December 9, aged 70.

Carl H. Senn, Williamsport, has been transferred from the Columbia to the Lycoming County Society.

Isaac R. Wolfe, Espy, has withdrawn from the Columbia County Society.

Lewis A. Flexer, Delano, has resigned from the Schuylkill County Society.

Albert R. Groom, J. Walter Shaddinger, and Jonathan R. Umstead are no longer members of the Bucks County Society.

John M. Slaymaker has resigned from the Lancaster County Society.

Adelaide M. Underwood has resigned from the Lancaster County Society.

Robert G. Boak, John C. Hoye, Herman E. McMillan, Jesse Moore, Allen W. Urmson, and Harry R. Wilson, are no longer members of Lawrence County Society.

Howard V. Merrill has removed from Meadville to 364 East 13th St., Brooklyn, N. Y.

Daniel Chester Groves has removed from Emporium to Brockwayville, Jefferson County.

J. Frank Wallis has removed from Philadelphia to 711 DeKalb St., Norristown.

The present address of Ralph Steans is Zellwood, Florida.

Seth J. Cadwallader has removed from Kinzua to Enola, Cumberland Co.

Orville G. Lewis has removed from Sparta to 841 Jefferson Ave., Washington.

J. Frank Rutherford has removed from Bishop to Amity.

Present membership 4688. S.

State News Items.

BORN.

To Dr. and Mrs. Joseph F. Ulman of Philadelphia, November 24, a daughter.

MARRIED.

Dr. William A. Upperman, Houston, and Miss Riles, recently.

Dr. Henry S. Weider, Philadelphia, and Miss Josephine Mendel, December 10.

Dr. Samuel A. Linebach and Miss Lillian M. Sowder, both of Quakertown, recently.

Dr. Pascal B. Bland and Miss Susan L. Montgomery, daughter of Dr. E. E. Montgomery, both of Philadelphia, December 27.

DIED.

Dr. William R. Hall, in Philadelphia, December 17.

Dr. Joseph Shrom, at Carlisle, December 27, aged 61.

Dr. Adolph Reisman, at Pittsburg, November 13, aged 75.

Dr. John Gillespie, at South Bethlehem, December 19, from apoplexy.

Dr. Jeremiah R. Levan (Univ. of Penn., '61) in Philadelphia, December 17, aged 73.

Dr. A. B. Sherman (Jefferson Med. Coll. '75) at Mahanoy City, December 11, aged 76.

Dr. Berthold Trautman (Univ. of Georgetown, '74) in Philadelphia, December 19, aged 62.

Dr. Jeremiah Behane (Royal Coll. of Surgeons, Dublin, Ireland, '94) in Braddock, November 22, aged 38.

Dr. John David Thorley (Jefferson Med. Coll., '71) at Harrisburg, November 13, from tuberculosis, aged 58.

Dr. Henry K. Weiser (Univ. of Penn., '81) of York, December 7, in Philadelphia, from heart disease, aged 48.

Dr. Daniel Charles McLaughlin (Univ. of Penn.,'05) in Philadelphia, from tuberculosis, December 6, aged 25.

Dr. Albert J. Fisher (West. Penn. Med. Coll., '52) at McAlisterville, December 31, from paralysis, aged 76.

Dr. Karl G. Hebeler (Univ. of Marburg, Germany, '55) at Pittsburg, December 23, from pneumonia, aged 72.

Dr. Delavan W. Longstreet (Baltimore Univ. School of Medicine, '89) of Lackawaxen, December 12, at Narrowsburg, N. Y.

Dr. Edwin K. Foreman (Univ. of Maryland, '62) was found dead in his buggy on his way to his home in Littlestown, December 12.

Dr. William Herbst, father of Dr. H. H. Herbst of Allentown, (Jefferson Med. Coll., '55) at Trexlertown, December 22, aged 73.

Dr. Thomas Lewis (Coll. of Phys. & Surg., Baltimore, '81) of Mahanoy City, at the home of his brother-in-law in Harrisburg, October 9, aged 45.

ITEMS.

Prof. George A. Piersol, Philadelphia, has been elected president of the Pennsylvania State Anatomical Board.

Dr. Charles L. Templeton has resigned as resident physician to the Reading Hospital and will locate in Seattle, Wash.

Medical Council Examination. Of the one hundred and twenty-two applicants examined in December, thirty-one failed to pass.

Dr. Alfred E. Fretz, Sellersville, has been appointed pension examiner to fill the vacancy on the Bucks County Board, caused by the death of Dr. Howard M. Griffee.

Dr. Maud Powell, a resident physician at the Woman's College Hospital, stepped into a dark elevator shaft at the hospital and fell two floors, but is expected to recover.

Dr. Joseph W. Hearn was thrown from his carriage on December 4, sustained a fracture at the base of the skull, and, though unconscious for a day, is now recovering.

Dr. J. G. Ziegler of Reading has severed his relations as assistant medical examiner in the Relief Department of the Pennsylvania Railroad, and is now established in private practice in Reading.

Dr. S. Weir Mitchell delivered the address on Benjamin Franklin at the unveiling of the busts of prominent American scientists at the American Museum of Natural History, New York, December 29.

Typhoid Fever in Pittsburg. More than 7,000 cases of typhoid fever were reported in Allegheny and Pittsburg during 1906, with more than five hundred deaths. The water supply is said to be impure.

Health Board Wins. The Altoona Health and Schools Boards came to an agreement January 7. In case the second vaccination of a pupil has been unsuccessful, a third vaccination can be done by the family physician in the presence of the Health Board's physician.

Typhoid Fever in Scranton. More than 1,000 cases of typhoid fever with ninety-seven deaths have been reported up to January 9. Typhoid fever bacilli have been found in the Elmhurst reservoir system, and the state department has assumed control of the water shed, reservoirs, and works of the Scranton Gas and Water Company. There are now nine representatives of the State Board of Health in the city.

Medical Board Examinations.

MEMBERS OF THE BOARD REPRESENTING THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA:

DR. HENRY BEATES, JR., 260 So. 16th St., Philadelphia
DR. WINTERS D. HAMAKER, Meadville.
DR. ROBERT W. RAMSEY, Chambersburg
DR. M. P. DICKESON, Media.
DR. J. GUY MCCANDLESS, Pittsburg.
DR. JOSEPH E. WILLETTS, Pittsburg.
DR. FRANCIS R. PACKARD, Philadelphia.

LIST OF QUESTIONS SUBMITTED AT THE MEETING OF THE BOARD, PHILADELPHIA, DECEMBER 4-7, 1906.

ANATOMY.

1. Name the arteries through which blood would pass from the heart to the thumb and the veins through which it would return from the thumb to the heart.
2. Describe the formation of the palmar arterial arches, and give anatomical landmarks for location of the same.
3. Describe the bony relationships and landmarks of the elbow joint.
4. Describe the anatomical structure of the female perineum.
5. Describe the structure and anatomical relationships of the female mammary gland.
6. Describe the anatomical structures entering into the formation of (a) the internal and (b) the external abdominal rings.
7. What muscles are attached to the great trochanter of the femur?
8. Describe the appendix vermiformis; give its relations and the external landmarks of its location.
9. Describe the superior maxillary bone.
10. Describe the uterus and give its relations and nerve supply.

PHYSIOLOGY AND PATHOLOGY.

1. Define metabolism. Cite an example.
2. Enumerate four conditions to be observed in taking the pulse, and describe what each signifies.
3. Over what functions of the body does the cerebellum preside?
4. Describe the thermal and chemical changes in muscle, as the result of exercise.
5. How is respiration influenced by the nervous system?

PATHOLOGY.

1. Describe the cardiac changes that occur in mitral stenosis.
2. Describe the alterations that occur in the respective coats of an artery which is the seat of endarteritis obliterans.
3. Describe two methods of wound repair.
4. Describe the pathologic changes occurring in dry gangrene.
5. Describe the various forms of acute salpingitis.

THERAPEUTICS AND PRACTICE OF MEDICINE.

1. What are the symptoms of exophthalmic goiter, and what are some of the measures employed in its treatment?
2. What are the symptoms of abscess of the lung?
3. Describe the treatment of a case of sunstroke.
4. What are the symptoms of a typical case of acute lobar pneumonia?
5. Describe the treatment of a case of diphtheria.

6. Describe the symptoms and treatment of a case of acute tonsillitis.

7. Describe the symptoms of a case of chronic lead poisoning and outline a method of treatment.

8. What are the symptoms of poisoning by belladonna, and how would you treat such a case?

9. Name some of the indications and contraindications of ergot.

10. Name some of the most important uses of the preparations of opium.

SURGERY.

1. Give the diagnosis and treatment of transverse fracture of the patella.

.2. Describe the symptoms and give the treatment of the several forms of gangrene.

3. Define surgical shock and give treatment.

4. What are the symptoms of "Colles' fracture," and give treatment?

5. Describe a backward dislocation of the hip joint, and give treatment.

6. Describe the objective and subjective symptoms of strangulated inguinal hernia, and an operation for the relief of the same.

7. Give the symptoms and treatment of fracture of the vertebral column with compression of the spinal cord.

8. Enumerate the recognized degrees of burns, and describe the treatment for the second degree.

9. Describe surgical methods for treatment of stricture of the male urethra, with respective indications.

10. Give a minute description for the proper administration of ether for general anesthesia.

OBSTETRICS.

1. Give the maternal causes of dystocia, and methods of treatment.

2. Give the most frequent causes of puerperal mammary inflammation and give treatment.

3. How would you deliver a child when face is presenting with chin posterior?

4. Describe the various methods of preventing infection during childbirth.

5. Give symptoms and treatment of placenta prævia.

6. Give the indications for version, and detail the operation.

7. Give the methods of resuscitation in the apparently still-born.

8. What symptoms would lead you to suspect threatened miscarriage?

9. Name the cause and give the diagnosis of pelvic hematocele.

10. To prevent laceration of the perineum, describe the proper method of deliverlng the head.

CHEMISTRY.

1. What is hemoglobin; name some of its properties and give a chemical test for it.

2. What chemical reaction takes place when hydrogen dioxid is applied to sloughing wounds?

3. Describe a reliable test for the detection of free hydrochloric acid in gastric contents.

4. When testing for albumin in urine, how do you determine between it and other coagulable proteids?

5. When testing for glycosuria with Fehling's solution, how do you determine whether the reaction is that of sugar or some other reducing agent?

MATERIA MEDIÇA.

1. Classify electricity as a remedial agent, (*b*) and name the different forms useful in the treatment of morbid conditions, (*c*) describe how they are applied.

2. Name five vegetable and three mineral astringents, describing method of administration and dose in each instance.

3. Name and describe three antiseptics useful in internal medication.

4. Describe and classify the important active principle of each of the following drugs: Hydrastis canadensis, veratrum viride and humulus.

5. Write a complete prescription for a child of three years suffering with pertussis. (or) Discuss ergota, stating to what alkaloid or active principle it owes its therapeutic activity.

DIAGNOSIS.

1. Give a practical method of differentiating gastroptosis and gastrectasis.

2. Differentiate chronic parenchymatous nephritis and chronic intestinal nephritis.

3. Describe a case of tabes dorsalis and differentiate the condition from multiple sclerosis.

4. State the diagnostic symptoms of progressive pernicious anemia, and what changes in the blood aid in the diagnosis.

5. Differentiate acute synovitis and acute articular rheumatism.

HYGIENE.

1. Name three diseases due to animal parasites, and tell how their introduction

into the human system may be prevented.

2. What are the relative effects on health of altitude, sea air, humidity and sunshine.

3. What diseases are communicated by stools and sputum, and what are the best methods of prevention of communication?

4. Name three exanthematous fevers and describe a rational effective method of quarantine, giving the proper duration thereof.

5. Give the disadvantages and dangers of cold storage foods.

Reviews.

TUTTLE ON DISEASES OF CHILDREN. A Pocket Text-Book of Diseases of Children. By George M. Tuttle, M. D., Attending Physician to St. Luke's Hospital, the Martha Parsons Hospital for Children and Bethesda Foundling Asylum, St. Louis, Mo. New (2d) edition, thoroughly revised. In one 12mo volume of 392 pages, with 5 plates. Cloth, $1.50, net; flexible leather, $2.00, net. Lea's Series of Pocket Text-Books, edited by Bern. B. Gallaudet, M. D. Lea Brothers & Co., Philadelphia, 1907.

This is an attractive little book, nicely printed and bound. The author claims no originality for its contents but seems to have realized his design to be concise and yet to cover the subject. The brief chapter on Examination of the Child is good and the one on Feeding of Infants is well worth reading. The diseases are treated in groups according to the organs affected, each being allowed some space for definition, etiology, pathology, symptoms, prognosis, and treatment. Taken all together it is a good review of the subject. C.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. The New Edition. All the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry and kindred branches; with over 100 new tables. By W. A. Newman Dorland, M. D. Octavo of 836 pages, with 293 illustrations, 119 of them in colors. W. B. Saunders Company. 1906. Flexible Morocco. $4.50 net; thumb indexed, $5.00 net.

The first edition of this dictionary appeared in 1900. The second edition was reprinted twice, the third four times, and now the fourth edition, appearing in July, 1906, has been reprinted. The author's aim to furnish "a concise and convenient word-book, aiming to furnish full definitions of the terms of medicine and kindred branches, and such collateral information as medical men generally would be likely to look for" seems to have been well attained. The definitions and pronunciations are to be specially commended. Two thousand new words have been included in the fourth edition, making it thoroughly up to date. S.

SEX AND CHARACTER. By Otto Weininger. Authorized translation from the sixth German edition. 8 vo. Cloth extra, net, $3.00. New York: G. P. Putnam's Sons. 1906.

This is a rather brilliant attempt at the practical solution of a theoretical question. The tragic death of the author demonstrates the state of mind into which he was driven. Far beyond himself, carried on by his own enthusiasm, his work, in spite of his appeal to the contrary, is sensational first, and logical, philosophical, second. R. R. J.

NEW BOOKS.

Pulmonary Tuberculosis. Its Modern and Specialized Treatment with a Brief Account of the Methods of Study and Treatment at the Henry Phipps Institute of Philadelphia. By Albert Philip Francine, A. M., (Harv.), M. D. (U. of P.) of the Staff of the Henry Phipps Institute, Philadelphia; Examining Physician to the White Haven Sanatorium; Instructor in Medicine and Physician to the Medical Dispensary of the University of Pennsylvania; Medical Registrar to the Philadelphia Hospital. Illustrated. 12mo. 240 pages. Cloth, $2.00 net. Philadelphia: J. B. Lippincott Company.

Societies.

THE AMERICAN SOCIETY OF TROPICAL MEDICINE.

Stated Meeting, Friday, December 7, 1906, at 8:15 P. M. Dr. Roland G. Curtin in the Chair.

The General Economic Importance of Mosquitoes. Professor John B. Smith of Rutgers College, New Brunswick, New Jersey, thought no one should be better qualified than a Jersey man to speak upon this subject, since no state in the Union had suffered more in reputation and in arrested prosperity from mosquitoes than New Jersey. He regarded the mosquitoes of great economic importance and as serious drawbacks to any community from three points of view: (1) Their influence, direct and indirect upon the health and well-being of the inhabitants. (2) Their influence upon the development of the agricultural resources, preventing or limiting the profitable use of infested territory for certain purposes. (3) Their influence upon land values due to the drawbacks mentioned under points 1 and 2. He claimed that the elimination of the mosquito would add ten millions to the taxable value of real estate in two years. Instances were quoted in which sections of the salt marshes were drained in the manner advocated by him, and of the results of unparalleled prosperity. Two industrial enterprises which were expected to employ from four to six thousand men had decided to locate on the marsh area. In determining whether, in any stage, any species of mosquito is of any value to man, directly or indirectly, it seemed to the author that the answer must be against the insects, leaving absolutely no evidence that they are of any use or benefit whatever to the human race, directly or indirectly, as larva or adult. It was stated that the legislature and governor of New Jersey are sufficiently convinced of the injurious effects of the mosquito upon the development of the state to venture an investment of $350,000 in the effort to secure the practical elimination of the pest.

Mosquitoes of Pennsylvania. Mr. H. L. Viereck of the Pennsylvania Department of Health spoke of his investigation of mosquitoes in Pennsylvania during the past summer. It was found that mosquitoes breed only in slow running or stagnant water that is devoid of the natural enemies of the mosquito; for example, no breeding was detected in reservoirs adequately stocked with fishes, nor in waters tinctured with sulphur water from the coal mines, nor in water covered with a film or oil from oil wells. In one instance a standing body of water polluted with waste from a glue factory produced culex (the non-malaria bearing mosquito) in myriads, but no anopheles, or the malaria-bearing mosquito. In Braddock and McKeesport where there were no depressed areas, there was no mosquito breeding. In the investigation all the principal cities and other communities had their mosquito problem inspected by the officers of the State Department of Health. A report based upon this field work is expected to appear in the early part of 1907.

The Life History of the Malarial Parasite. Dr. Joseph McFarland gave a brief description of the life history of the malarial parasite, first showing a temperature chart of tertian malarial fever and explaining it by the changes through which the developing parasites passed in the human body. Each ascent of temperature characterizing a paroxysm marked the growth of a generation of parasites which sporulated at that time, forming many small embryos which entered the corpuscles and began the process all over again. This cycle within man was complete and progressive in itself causing constantly increasing damage to the patient, but providing no means for the transmission of the disease from man to man. Such transmission is accomplished by the mosquito—anopheles. When the insect sucks blood containing malarial parasites, it becomes infected by the parasites which pass through regular developmental stages in its body before being transmissible to other men, the duration of the cycle varying from 8 to 12 days, according to the temperature, and probably taking place only during summer.

The adult parasites known as gametocytes appear in the blood as rounded bodies the size of red corpuscles in the benign forms, as crescentic or falciform bodies in the malignant forms of malaria. The smaller of these, the microgametocyte, breaks up into long filiform bodies or spermatozoids which fertilize the larger (female) parasites or macrogametocytes in the stomach of the mosquito. The fertilized parasite is then known as a zygocyte. It elongates, bores its way through the stomach and takes up its position on the outer surface of the insect's stomach, grows into a large rounded body known as a blastomere which later breaks up into an immense number of small falciform or filiform bodies known as sporozoids which are embryo parasites. These migrate to the salivary glands of the mosquito to be discharged from its body by the saliva. There are so many of these sporozoids that the probability is that they are not all discharged before the insect dies, which, during the period of hibernation, may be several months. During all the time between their formation and the death of the mosquito, the insect is infective as each time it bites, the sporozoids pass into the proboscis wound in the saliva. Only the female mosquitoes bite, therefore only the females transmit the disease. In order that the mosquito may transmit the disease it is necessary that she bite a human being at a time when there are gametocytes in the blood, that she subsequently live at least 8 to 10 days, and that she then bite some human being.

All the evidence goes to show that the human cycle takes place only in human beings, not in any other warm-blooded animal, and that the mosquito cycle takes place only in the mosquito, not in other insects. As the malarial parasite is only one of many parasites affecting man, so it is only one of many affecting mosquitoes.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, Wednesday, December 5, 1906, at 8 P. M. The President, Dr. Arthur V. Meigs, in the Chair.

Cases Allied to Amaurotic Family Idiocy Apropos of Two Patients, One of Whom Presents among Other Stigmata Polydactylism of Four Extremities. Dr. A. Gordon exhibited two patients who presented the following peculiarities: Blindness, dating from infancy, and mental weakness; both are Hebrews of Russian extraction and are brother and sister. The eye examination shows optic atrophy with unusual redness in one of them, suggesting the findings in Fay-Sachs' disease. The clinical manifestations of both cases are highly suggestive of amaurotic family idiocy. These two cases, also others reported by various authors, especially by Spielmeyer, lead logically to this view, that amaurotic family idiocy presents varieties and subvarieties. As to their pathogenesis, Dr. Gordon expresses the opinion that the ductless glands are probably inherently deficient and produce the cell changes found in all cases of this affection. Both patients presented also a number of stigmata of degeneracy, among which polydactylism of the four extremities in the brother was the most curious and unusual.

Dr. F. X. Dercum was in accord with Dr. Gordon that in the disease of amaurotic family idiocy there were at work a morphological factor, with all the signs of arrested development, and a process of chronic autointoxication. Regarding the studies which have been made and in which it has been stated that the behavior of the nerve cells suggests the action of a poison, he thought a very plausible explanation is that this poison is produced in the body and has resulted in some grossly defective metabolism or faulty action of persistently abnormal ductless glands.

Dr. Howard F. Hansell in speaking of the eye examination said there was presented the appearance of an absorption of the choroid in places and in addition some typical signs of high myopia. The condition of myopia, however, he believed secondary to the more marked eye condition. The patients seen by Dr. Hansell prior to the ones exhibited had died at an earlier age.

Dr. Walter L. Pyle from his examination of the records of such cases said there were very few in which there were such perfect specimens of polydactylism as in the case presenting the six fingers and six toes of the four extremities.

Symptoms and Signs in Urinary Lithiasis. Dr. Charles Lester Leonard said that, as the result of the study of 352 cases of suspected urinary lithiasis, calculi had been detected in 71 cases in which the accuracy of the Röntgen method had been confirmed by the recovery of the calculi. Of these cases 42 were ureteral calculi, and in 28 of these cases the calculi had been passed on expectant medical treatment based upon the accurate Röntgen diagnosis and the study of the symptoms and signs. His study of the symptoms and signs showed that it was impossible to differentiate calculus disease from other intra- or extra-ureteral and renal conditions without the Röntgen method; that this method should be employed in every case, since it cleared the field by detecting or excluding calculi; that the symptoms and signs were of particular value in studying the question of treatment; that the indications were dependent upon the size of the calculus and the symptom complex; that the detection of a calculus by the Röntgen method did not always form an indication for operation; that a differentiation can be approximately made between ureteral and renal colic. Ureteral calculus in the juxtavesical portion of the ureter produces symptoms very closely resembling vesical calculus. While the presence of an undetected calculus may be a grave danger and a menace to the integrity of the kidney, as soon as its exact size and location are known that menace ceases, unless there are symptoms present indicating progressive impairment of the function of the kidney. In every case, therefore, presenting suspicious symptoms he believes it essential to the preservation of the integrity of the kidney to determine whether or not a calculus is present; if present, whether it is occlusive, or if it has passed into or out of the bladder. Without the accurate knowledge obtainable in such cases by the Röntgen method he showed that the patient is in grave danger, as all symptoms may subside and yet most serious injury result by complete occlusion of the ureter and the consequent atrophy of the kidney. In none of the cases with diseased kidneys has any symptom ever arisen indicating a systemic injury as the result of the Röntgen examination.

Dr. James Tyson spoke of the cases simulating stone in the kidney. In such cases had been found adhesion of the capsule of the kidney to the substance of the organ and to the neighboring fat and tissues. Relief usually followed the stripping up and pushing back of the capsule of the kidney.

Dr. Robert N. Willson referred to a case which Dr. John B. Roberts had seen with him in which the question arising was whether there was stone in the kidney or a floating kidney. This question had not yet been determined. The x-ray had showed entire absence of any concretion in either ureter or kidney. There were periodic attacks of pain typical of renal colic. Pus and blood would appear and disappear. An explanation of such cases suggested by German writers was the transmission of a nervous condition, probably through the splanchnic plexus to the bowel. Dr. Roberts' opinion had been that the case was one of pure and simple neurasthenia. Further reference was made to a case in which two x-ray plates had failed to show stone, but in which operation had revealed stone in the kidney.

Dr. John B. Roberts thought that in women Kelly's method of passing a small ureteral bougie, covered with wax, up into the ureter and seeing on withdrawal if it is scratched by a stone, might at times be of great service. This, however, requires great dexterity which many do not possess.

Dr. Leonard in closing said he had had a number of cases in which he had been able to detect the presence of pus in the pelvis of the kidney. The pus had been withdrawn and the kidney washed out with subsequent cure. In a number of cases of suspected stone, relief of symptoms had followed the x-ray exposure, showing, of course, a mental cure rather than physical. In the three hundred and fifty odd cases he had examined for suspected stone in which the kidney was the seat of the disease there had been no evidence of deleterious effect from the exposure of the patient to the x-ray.

A Case of Extensive Leukoplakia Beginning in Childhood, Accompanied in the Early Stages by Follicular Keratosis and Followed by Carcinoma of the Tongue. Dr. M. B. Hartzell read this paper, reporting an extensive leukoplakia, involving the entire buccal mucous membrane, occurring in a girl of eleven years, associated with keratosis of the follicles of the skin. After a duration of fifteen years, cancer of the tongue developed, necessitating excision of half this organ. The association of keratosis of the skin and mucous membranes was said to indicate, in exceptional cases, that the disease may be due to some constitutional fault, rather than to local cause.

Weak ointments of salicyclic acid and the x-ray have been found by the author curative in some cases of leukoplakia.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

Annual meeting, held in Philadelphia, September 18, 19, and 20, 1906. The President, Dr. William Benton Snow of New York City, in the chair.

(Concluded from page 224.)

The Present Status of Electrotherapy. Dr. H. H. Roberts of Lexington, Ky., said that, with all the advancements of theories, methods and systems, nothing had been received with more confidence and interest than electricity as a therapeutic agent. Although it has passed through periods of prominence and of depression, there has come enlightenment and confidence in electrotherapy. Because of the lack of uniformity in the manufacture of the various electrical apparatus, comparisons in the work of operators were said to be difficult. The fear was expressed that the impetus given electrotherapy had caused the occupation of the electrical field by men totally ignorant of the science. Therapeutic results rather than psychological effects were desired by the honest and conservative workers, and such workers should have a broad and comprehensive knowledge of electrophysics and electrophysiology. Since electrotherapy is a distinct science, the man who administers it should be as familiar with its effects and results as the man who administers medicine. The most essential requirement in the administration of electricity was said to be an adequate knowledge of physical diagnosis. Appreciation was expressed of the realization in colleges of the importance of thorough training in electrotherapeutics.

Methods of Procedure in the Use of High Frequency Currents. Dr. Frederic de Kraft of New York City said that the modern static machine seems to be particularly well adapted as a means of charging the Leyden jars of a resonator on account of its extremely high potential discharge. The currents of high frequency and high potentiality which can be obtained from such a machine and resonator were enumerated as the D'Arsonval, Tesla, and Oudin currents. The three methods by which the D'Arsonval current can be utilized were given, and the technic explained. The class of cases yielding the best results in the author's hands with the D'Arsonval current have been conditions due to faulty metabolism, improper living, excesses in food and drink, and insufficient exercise. In five cases of obesity a reduction of from eight to twenty-five pounds had been accomplished within two months. Cases of gonorrheal rheumatism were much benefited. Cases of pulmonary affections responded well. The Tesla current has not been largely used by the writer because of its lack of adaptability for the bipolar methods. The Oudin current was said to be possessed of penetrating properties to a high degree. The manner in which this could be demonstrated was described. The several methods in which the Oudin current could be used were given in detail. It was suggested that much of the therapeutic value of high frequency currents is due to the actinic property of its spark and spray discharge and to its power to produce chemical changes in the tissues, as is evidenced by the very great increase of the solid constituents of the urine, by the increase of the excretion of CO_2, as well as the positive increase in heat production and increased activity of the sweat glands. The remedial effects of the high frequency currents in infectious diseases were considered to be due largely to their power to check toxins, improve nutrition, and (when used in not too great ampèrage) to the strengthening of the natural defenses of the body.

Dr. William S. Newcomet gave a clinical demonstration of radiotherapeutic results in cancer. Several cases were exhibited. One case of particular interest was a patient with large round cell sarcoma of the neck. Two years previously the first operation had been done, when the growth promptly returned. The *x*-ray was used with benefit, but a second operation was necessary. In spite of the *x*-ray the growth recurred and grew until the methods of deep treatment were instituted. The patient has been receiving an average of one hour *x*-ray treatment almost every day and the tumor has been decreasing. Dr. Newcomet described his devised method of treating four patients at one time.

Electrochemical Sterilization as Applied to Malignant Diseases of the Orbital and Nasal Regions. Dr. G. Oram Ring of Philadelphia directed attention to the value of electrochemical sterilization as one of the very valuable adjuncts in the treatment and inhibition of certain types of malignant disease of the nasal and orbital regions. He believed that the bloodless devitalization of a malignant neoplasm, with the possibility of carrying the sterilization with precision beyond the growth into a region where some latent cells may be present and finally into healthy tissue, presented a process of immense importance. In the treatment of orbital sarcoma, he reminded his hearers that, if the modern viewpoint were correct, every primary malignant growth is at first purely local, and further that recurrence is highly probable; then with proper dosage and exact technic a method that makes possible the destruction without subsequent stimulation is entitled to an important place in methods of treatment. A case was cited indicating the possibilities for good in electrochemical sterilization of malignant nasal disease after failure of *x*-ray therapy. After prolonged *x*-ray treatment without benefit cataphoric sterilization under ether was performed. Five minor treatments removed all trace of the disease.

Cataphoric Treatment of Cancer of the Face. Dr. Samuel McClary, 3d, of Philadelphia, in presenting this paper stated that when there is no lymphatic involvement, cancer of the face is probably best treated by cataphoresis, because (1) only diseased tissue and a small amount of healthy tissue is destroyed; (2) the resulting scar is less conspicuous than by any other method, except possibly *x*-ray treatment; (3) the danger of implantation is eliminated. The technic of the operation was fully described with the after treatment. In some cases in which the current is not well borne, the bipolar method is useful in that it does not embarrass the heart or respiration. In connection with his paper Dr. McClary exhibited several patients showing the effects of the cataphoric treatment.

A Resume of the Radiometric Dosage of the Roentgen Ray Therapy. Dr. M. K. Kassabian in presenting this paper classified and described the various methods in vogue, emphasizing the advantages and disadvantages of each. The twenty-one methods were classified under the following five headings: (1) Measurement of the electric current; (2) penetration method; (3) physico-chemical method; (4) ionization method; (5) photometric method.

After elaborating upon each of the above, Dr. Kassabian commented on the fact that at present there exists no practical standard or unit of dosage. He urged that the selection of a standard and an exact unit is fraught with much difficulty, although a committee on meters is actively engaged in the work. Every individual, he said, is an equation unto himself and no one can deduce the amount of biological and physiological action of the rays by measurement of chemical and physical properties of the rays. The unit to be ideal must be accurate, precise and practical.

Experiences with Electric Light in the Treatment of Various Diseases. Dr. H. Finkelpearl of Pittsburg in this paper stated that elimination is the most ancient method of freeing the body of morbid matter and that of all the physical agents for this purpose electric light is the remedy *par excellence.* He reported a few cases treated by light, among which were conditions of albuminuria, jaundice, an affection of the skin (diagnosed by two dermatologists as psoriasis and as lichen ruber), syphilis, scabies, neurasthenia. The good results were general in all the cases. The following conclusions were drawn: (1) Radiant heat is more penetrating and consequently drains the deeper tissues much better than any other form of heat. (2) Patients who can not stand a high temperature will perspire at a much lower temperature when electric light is the source of heat. (3) Patients will tolerate a higher degree of a longer exposure to radiant heat than to any other form. (4) That it may be given with impunity to people having a weak heart, if the patient is watched. (5) As the head does not have to be included, various substances may be vaporized within, and caused to be absorbed by the open pores, avoiding the liability of irritating the respiratory organs.

Concentrated White Light. Dr. F. Barrett of Westbrook, Maine, presented this paper.

High Frequency Currents in Ophthalmic Practice. Dr. L. Webster Fox said that his work had been of an experimental character. The current used was obtained by charging the direct currents of relatively low tension into alternating currents of exceedingly great rapidity and high tension through a large Ruhmkroff inductor, Leyden jars, and Oudin resonator. The applications were made directly to the eyelids by a Wappler vacuum spiral tube and directly to the eyeball by specially devised vacuum eye electrodes, single and double. The conditions treated included blepharitis marginalis, granular lids, ulcers of the cornea, iritis, ophthalmoplegia interna, and many other. From his experience with amblyopia he believes that the high frequency current offers a curative measure much more simple and radical than the fusion method with the amblyoscope. His attention had been first called to the treatment in this condition by Dr. David H. Coover of Denver. Dr. Fox, in closing, quoted from Guilleminot, who stated in regard to electricity in general: "If the progress of science finally enables us to master this force, which is the very essence of life, and to subjugate it, as steam has been subjugated to the service of mankind, we shall have ready to our hands the most potent curative agent imagined to modify the volition and ameliorate the condition of living beings."

Fluidextract of Sheep's Thyroid an Aid in the Treatment of Cancer. In this paper the deductions of Dr. Charles Am Ende of New York were derived exclusively from cases, microscopically ascertained to be malignant, with the exception of one, all inoperable. He asserted that the extract could be given in large doses for a long time because it was free of the substance of the crude gland productive of congestive and cardiac disturbances. Among its effects were mentioned elimination of cancer toxins, as probably an antibody, gain in physical and mental strength, prolongation of life, and alleviation of pain.

The following officers were elected: President, Dr. Morris Woil Brinkman, New York; vice-presidents, Dr. J. D. Gibson, Denver, and Dr. M. K. Kassabian, Philadelphia; secretary, Dr. A. C. Geyser, New York; treasurer, Dr. Richard Joseph Nunn, Savannah; executive council, Dr. Wm. Benham Snow, Dr. Fred H. Morse, and Dr. Francis B. Bishop.

Transactions of the Allegheny County Medical Society.

SYMPOSIUM—PROSTATIC HYPERTROPHY.

(Read before the Allegheny County Medical Society.)

ETIOLOGY AND PATHOLOGY.

BY I. J. MOYER, M. D.,
Pittsburg.

Hypertrophy of the prostate gland occurs very frequently in men between forty-five and seventy years of age. The most common period at which the malady occurs however, is the fifth decade. The frequency with which it occurs has been variously estimated. According to Sir Henry Thompson's estimate, thirty-four per cent. of men reaching sixty years of age have enlarged prostates and less than half (fifteen to sixteen per cent.) of these suffer from the disease. It is not the prostate enlarged from true tumors, as myomata, adenomata, and other growths,but it is an overgrowth of the histological elements normal to the gland. The causes of this overgrowth, or hypertrophy, have not yet been fully determined. Keyes in his 1905 edition says: "The true nature and pathogenesis of hypertrophy of the prostate are not known. We can only describe it as a disease of the later years of life, a chronic, noninflammatory hyperplasia of all the tissues of the gland, but especially of the epithelial elements, diffuse in character and subject to inflammatory attacks and secondary metamorphosis."

To begin with the anatomy of the prostate gland, it consists of glandular acini and ducts embedded in involuntary muscle; the latter, supported by fibrous tissue, constitutes the stroma of the organ. The stroma forms, by peripheral condensation, a capsule for the gland, which is distinct from its sheath. This latter is derived from the pelvic fascia. The stroma constitutes more than one half the bulk of the organ, the remaining portion being composedof glandulartissue. Fromembryology we find that the prostate is developed from the genital tract and not from the urinary. The rudiments exist in the female and the prostate is not (as is sometimes stated) the homologue of the uterus. From physiology we find that the prostate secretion influences the motility of the spermatozoa; that removal of the prostate and vasa efferentia prevents fertilization; and that the prostate is passive during urination and contracts only during sexual excitement.

We will first discuss the pathological anatomy. From John B. Deaver's richly illustrated work of 1905 on the prostate gland, we get a very concise description: Our knowledge of the pathologic histology of the enlarged prostate is due almost entirely to the exhaustive works of Ciechanowski. He, as well as Green, Brooks, and Crandon (who undertook a separate examination of his conclusions) agree that both the glandular and fibrous overgrowth of the prostate are the long-delayed result of chronic inflammation, insidious in onset, slow in course, and for many years, perhaps, latent.

The increase in the size of the prostate appears to be due to dilated acini and ducts whose mouths are obstructed. In the acini or glands the mucous membrane shows a variety of changes. The cells may exist in only the usual single layer, or they may be heaped up in several layers, showing a catarrhal inflammation in which new cell formation has taken the place of secretion. In this way the acini become closely packed with epithelial cells closely simulating cancer nests; but of course it is not carcinomatous in character. In some cases the acini will not be filled with epithelial cells, but there will be such an admixture of lymphatics and even polymorphonuclear leukocytes as to constitute true suppuration; the prostate in these cases being riddled with minute abscesses although outwardly presenting only the usual evidence of senile enlargement. If secretion takes the place of cell proliferation, the single layer of columnar epithelium may still surround the acini, but this will be dilated by a variable amount of mucoid material. This dilation of the acini may be extreme in some instances, giving rise to the cystic prostate. The ducts are, as a rule, compressed in proportion to the dilation of the acini, and may even be flattened to fibrous bands with no remaining epithelial structure. In the stroma there may be found groups of true round cells, infiltrating, according to Ciechanowski. The stroma surrounding the ducts and acini shows the presence of true fibroblasts becoming cicatrized. In other spots may be found fully formed fibrous tissue. The muscle cells are not found to be hypertrophied; and tendency to muscle hypertrophy about the acini is soon overcome by the fibrous growth.

The particular form of enlargement depends entirely for its glandular or fibrous character on the situation of the intraglandular or interglandular changes and on their relation to each other. The fibrous form of enlarged prostate is supposed to be rarer than the adenomatous, but Green and Brooks found the reverse in fifty-eight examinations. These authors describe the clinical course as follows: Suppose that acute inflammation of the prostate arises; then with cessation of the acute inflammation following a removal of the cause and normal reaction on the part of the tissues of the organism, interstitial hyperplasia should cease: a reaction and atrophy follow from the sclerosis of the fibers as the embryonic tissue takes on adult form.

Such a result does follow in favorable cases of prostatitis in the young and healthy, and as the sclerosis of the newly formed tissue continues, the atrophic or hard prostate follows to a greater or less extent, always provided, however, that the same fibrous sclerosis does not excite secondary changes in the glandular epithelium. But in the middle-aged or old man, particularly when more or less general or arterial disease exists, resolution and healing do not so readily follow, and, instead of cessation of connective-tissue hyperplasia, the condition becomes chronic. With the increased fibrosis, consequently, thickening of the walls of the veins and lymphatics follows, and chronic congestion is added to the factors tending to prolong and increase interstitial hyperplasia, edema and inflammatory exudation. So it happens that, with the enlarged prostate of the aged, acute or subacute proliferations are found mingled with masses of adult sclerosed connective tissue. As an inevitable result of the overgrowth of the stroma, atrophy of the smooth muscle cells follows.

There are, then, two main pathological characters under which enlargement may occur; namely, a pseudoadenomatous change, and another in which an increase of the stroma of the organ is conspicuous. In either case the enlargement may be local or general, or both processes may coexist and it is not a true hypertrophy.

Various theories have been advanced as to the etiology. John Hunter first suggested the inflammatory origin. Home thought it due to portal congestion, a result of high living. Mercier thought it might result from sluggish circulation as coming from sedentary habits. Cooper thought it a result of old age.

The theory of arteriosclerosis has been disproved by Casper and Motz. That of sexual senility by the failure of castration to achieve changes of the prostate demands support of the theory. That the prostate is not the analogue of the uterus is proved by embryology, consequently it has no analogy in the pathological changes of the latter. That it is not neoplastic in origin is proved by the revolutionary doctrines of Ciechanowski, already touched upon.

The inflammatory theory of causation appears to have the foremost place to-day; whether or not this theory is proved remains to be seen.

We shall examine some of the factors which lead us along the inflammatory line. Probably the most frequent of all causes is a preceding inflammation of some kind. Gonorrhea comes in for a large share of blame, especially since Casper has shown a similar condition to exist in young men suffering from gonorrheal prostatitis, but it is doubtful if gonorrhea does any more than simply predispose to prostatic enlargement, because of the congestions which it induces, rendering the organ more susceptible to the influences of advancing years.

Sexual excesses appear to be a potent factor in causing prostatic enlargement, as Wanless has found it abnormally frequent in India, the customs of the country permitting sexual excesses both early and late in life.

For materially augmenting the sexual factor, he also attributes the habit of eating large quantities of spices and highly seasoned food, thereby inducing portal congestion. Similarly Wishard has found prostatic enlargement very frequent in Turkey among those who are addicted to sexual excesses with high living. That the process may be latent for years seems to be suggested by the observations of Bangs of New York (*Medical Record*, 1905). He cites his examination of three hundred cases. Bangs finds excess of sensibility in the location of the verumontanum and a hyperemia of this location through the urethroscope. This is most marked in masturbators and those who practice coitus reservatus and coitus interruptus and sexual excesses. Ciechanowski states that there is a predominance of inflammation in this locality of the prostate in prostatic enlargement.

The symptoms of urinary irritation in these classes of cases are often the "shadows of coming events." In the three hundred cases, Bangs found eighty-five per cent. were subjects of unphysiological sexual indulgence, the remaining fifteen per cent. were apparently due to derangement of the portal circulation. This writer places in this category the sexual influence of "long engagements," and the man whose wife says, "only fools have children." He claims that the unphysiological exercises of the prostate finally excites prolonged inflammatory irritation which eventuates in the recognized prostatic histology of Ciechanowski.

A strong point in the inflammatory theory stated by Crandon is that in both processes described clinically as chronic prostatitis and prostatic enlargement, the beginning seems always to be about the glands and ducts and not near vessels, in other words they are both intensely of urethral and not hematogenous origin. With the present light, it appears, then, that whatever causes produce prostatic hyperemia repeatedly, be they gonorrhea, exposure to cold, alcoholism, youthful indiscretions, sexual excesses, or sedentary habits, all tend to produce prostatic irritations and congestions. At that period of life in which degenerations and decline of sexual vigor appear, these irritations and congestions assume an inflammatory action with formation of adventitious fibrous tissue in the prostate.

What we need to settle the pathogenesis of prostatic hypertrophy as suggested by Deaver, is collective investigation and large groups of cases: clinical history of the cases, including previous local diseases, such as gonorrhea, prostatitis, calculus, and so on; the social habits, and microscopical examinations of diseased organs removed by operation or at autopsy. We should also know whether there are present appearances of senile enlargement, of round celled or catarrhal proliferation, fibroblasts changing into scar tissue.

SYMPTOMATOLOGY.

BY J. M. THORNE, M. D.,
Pittsburg.

Symptoms of prostatic hypertrophy usually develop insidiously. It is said that about fifty per cent. of persons suffering from this disease have urinary symptoms. It is supposed that the other fifty per cent. have little or no difficulty, unless the growth impinges upon the urethral canal enough to interfere with the flow of urine.

The symptoms of a given case, therefore, depend upon the pathology of that case.

Irritable bladder occurs among the earlier symptoms. Micturition becomes more frequent. There is often some difficulty in getting the flow started. The stream lacks force, and is apt to drop directly downward instead of being propelled from the body. In finishing the act, there is apt to be some difficulty in making the closure of the neck of the bladder complete, resulting in dribbling of urine. Urination is attended with a burning sensation, which is often agonizing. It becomes more and more frequent, especially at night, until the lack of proper rest becomes a serious matter to the patient. These symptoms are probably caused by a congestion, or mild type of inflammation, of the mucous membrane of the prostatic urethra and neck of the bladder.

As the growth impinges upon the urethral canal, it becomes possible to pass only a part of the contents of the bladder, and a small amount is retained, which is called residual urine. The bladder develops a post-prostatic pouch, and the quantity of residual urine gradually becomes larger, until it is quite as large or larger than the amount expelled.

If the residual urine be drawn off daily with a catheter, under aseptic precautions, the patient may continue for a long time with but little change. But if the residual urine be allowed to become infected, a cystitis supervenes. Then the desire to urinate becomes very frequent, painful and attended with tenesmus.

While pain is usually absent in mild cases, it is rather a constant symptom in severe cases. The pains are in the groins, thighs and testicles. There is a sense of fullness in the rectum and perineum. There is a soreness and smarting in the urethra, and sometimes shooting pains to the glans penis.

The tenesmus leads to hemorrhoids, prolapsus ani and sometimes involuntary evacuation of the bowels while urinating. In other cases there is a real obstruction to the passage of fecal matter through the rectum.

With the onset of the cystitis, there is pain in the bladder behind the pubes. The urine becomes turbid, full of mucus, fetid and ammoniacal.

Hematuria occurs in many cases in a periodical way. In a few cases of enlarged prostate, the irritation in the gland causes erections or priapism; in others an abnormal tenderness of the testicle or a painful orchitis develops.

Death occurs from infection spreading to the kidneys, causing a general sepsis or uremia.

EXAMINATION.

BY WALTER F. DONALDSON, M. D.,
Pittsburg.

In the order of their importance we will briefly consider three methods of examination in hypertrophy of the prostate gland; namely, manual, instrumental, and visual. The most accurate results in an examination to ascertain the condition of the prostate gland are obtained by the introduction of a finger into the rectum. The bowels should be evacuated before such an examination, and if the patient proves very sensitive a sedative suppository or injection may be introduced. With the patient standing, his legs apart and leaning forward, his hands upon a table or chair, the index finger protected by a cot is gently introduced through the sphincter, and an effort is made to feel the apex of the prostate which is, in its normal condition, discernible to the expert finger. Keep in mind the size of the normal prostate which is about that of a horse chestnut, heart-shaped, with the base upward toward the bladder, and, when it is very sensitive to pressure or at all prominent, that some pathological condition may be inferred. Along the upper border of the normal prostate nothing can be felt save the bladder wall, elastic and fluctuating. Laterally the outlines of the gland are easily explored and irregularities in surface and density are readily detected.

Bimanual palpation may be required and is often distinctly serviceable in these subjects, pressure being made with one hand or by an assistant over the suprapubic region. In cases of enormous enlargement, the prostate so encroaches upon the rectum as to make exploration difficult, the tumor being felt as soon as the examining finger passes the sphincter. This method will of course elicit much tenderness, together with vesical and rectal tenesmus if there be present any considerable degree of inflammation or acute hyperemia.

Instrumentally we are afforded great assistance by a metal catheter of proper caliber—usually about No. 20 (French), which is handily sterilized by passing through an alcohol flame or by immersing in alcohol and igniting same. White and Martin recommend the use, where possible, of a stone searcher. Either instrument should be grasped lightly, the pressure gentle and so directed that it may follow irregularities in the prostatic urethra. Normally, there being no residual urine and the bladder just evacuated, none should flow through the catheter; at most, a few drops. In passing we should note the presence or absence of urethral stricture, deviations from the line after the instrument reaches the subpubic region, the distance from the meatus to the point where urine begins to flow, and the height to which the vesical orifice may have been raised. The instrument and an exploring finger in the rectum are made to engage between them the structures about the vesical neck, and, in the presence of any condition of disease, an approximate idea of the extent of the hypertrophy and the degree of induration, together with an approximate idea of the anterior posterior diameter of the organ, may thus be formed. Dr. Deaver says that by this combined method of examination we should in every case, where present, positively detect enlargement of the prostate. If, in a suspected case of hypertrophy, an ordinary metal catheter passes readily without the necessity of marked depression of its handle, and if, moreover, urine flows through it when it has penetrated to the depth of seven or eight inches, the prostate is, in all probability, not appreciably enlarged. If, however, obstruction be encountered at a point more than seven inches from the meatus it is more than likely due to prostatic enlargement, as stricture never occurs in the prostatic urethra.

If hypertrophy exists, it will be necessary to depress the handle of the catheter well down between the patient's legs before its point will enter the bladder, and even then it may be found impossible to introduce it without undue force because of the point impinging upon the enlarged middle portion of the prostate and because of the consequent elevation of the vesical orifice. If an instrument with a prostatic curve is arrested at the same point, but on continued pressure passes on into the bladder, often with a distinct jump, the obstruction is one caused by prostatic projection upward of the urethral floor; if the metal instruments will not pass and a small rubber catheter enters, the urethra is probably deflected to one side or the other. Deviation of this part of the urethra will often be noted also by reason of the fact that it is necessary to move the handle of the instrument considerably to one side or the other, indicating inequality of the two lateral lobes; the shaft of the instrument will be deflected to the side of the greatest enlargement, while in cases of symmetrical enlargement there will be no deflection. Urethral length varies much in individuals, but if a distance of more than eight inches is passed before the urine flows from the bladder, known to contain at least four ounces of urine, the prostate is enlarged. Always remember the possibility of finding a pocket of urine in the prostatic portion of the urethra in this class of patients. The prostatic urethral length may be determined more accurately by the method of White and Martin—that of passing a bougie to the triangular ligament of the perineal region and noting the distance on its withdrawal. A catheter is then introduced, and at the point where urine first flows a mark corresponding to the position of the meatus is made. The catheter is withdrawn and measurement made from the marked point to its eye. Subtracting the anterior urethral length as ascertained by the bougie from the total length, the remainder represents the length of the prostatic and membranous portion, and if, after subtracting three-fourths of an inch for the membranous portion, the prostatic portion be over one and three fourths inches long, the diagnosis of enlargement of the prostate is reasonably assured.

After four or five ounces of warm boracic acid or saline solution have been introduced into the bladder, the beak of the instrument should be turned in all directions, searching for stone, a frequent complication of prostatic enlargement. The instrument may then be withdrawn until the beak lies just within the internal vesical sphincter. Then, turning it, we can explore not only the base of the bladder but its neck, for, in the absence of polypi, or of great enlargement of the prostate's middle portion, the rotation of the instrument will not be resisted while its beak is still within the neck of the bladder.

Visually our examination is almost limited to the act of micturition, of which act no detail is too insignificant to be of value in the subsequent handling of such patients. We should note ease or lack of facility in starting the stream of urine, the force and size of the stream and also whether or not there be any interruption of the stream such as might be produced by ball-valve-like action of a pedunculated enlargement of the so-called "middle lobe" of the prostate or, possibly, by a calculus. We should also note if the conclusion of micturition be normal or if there be dribbling of urine. We at once estimate amount, color, odor, reaction and sediment. These, together with the knowledge of the frequency of the act, give a rough estimate of the amount voided in twenty-four hours and the condition of the bladder and kidneys, four ounces every two hours indicating no serious renal lesion, while four ounces every three or four hours might indicate diminished excretion by the kidneys, or a rapidly increasing amount of residual urine. On the other hand, if half an ounce is being voided every fifteen minutes, the kidneys are excreting more than the normal amount for twenty-four hours, and retention with overflow likely exists.

In addition, to ascertain the condition of the urinary tract, we should examine the patient's general physical condition.

MEDICAL TREATMENT.

BY J. A. LICHTY, M. D.,
Pittsburg.

The medical treatment of hypertrophied prostate is being gradually limited to a smaller sphere. Early text-books are profuse in remedies, while later or more recent ones mention only a few and not at all with any air of confidence. This is, of course, due to the fact that surgery is gradually covering this field, as it rightfully should. There is, however, one indication for internal medication in hypertrophied prostate which should not be overlooked, for if recognized it may save the patient months and even years of suffering. I shall refer to this later.

The remedies which have been used in this condition may be divided into two classes, (*a*) the essential or specific remedies, and (*b*) the remedies for symptomatic conditions.

Of the first, ergot is mentioned only in an historical way, for it is no longer maintained that the prostate gland is the analogue of the uterus, and as the administration of ergot was based upon this idea, it has been abandoned. Other remedies are the urinary antiseptics, such as boracic acid, formin or urotropin. These remedies should be administered as soon as it is determined that there is hypertrophy of the gland, whether there are symptoms or not, or whether there is residual urine or not. And their administration should be continuous, and for an indefinite time. By doing this, catheter life may be deferred to a more distant day. I consider this a very important and specific indication. We are usually told that as soon as residual urine is found of a certain quantity, the catheter should be used. I believe that the indication for the use of the catheter should be the bladder symptoms, in the main, and the symptoms can be deferred for a considerable time if the above remedies are administered.

While catheterization can be done safely, theoretically, when it is once begun the chances for infection of the bladder and the organs higher up are infinitely greater than before.

The symptomatic remedies may be such as ordinary cystitis remedies,—liquor potassæ, potassium citrate and potassium acetate for an acid urine, and ammonium benzoate for an alkaline urine. Triticum repens is mentioned by all text-books as a valuable remedy. Nux vomica or strychnin may be used where there is atony of the bladder; colchicum where there is a gouty diathesis; sodium iodid where there is arteriosclerosis; belladonna or hyoscyamus where there is an irritability of the bladder; and cardiac stimulants where there is congestion due to a weak or incompetent circulation.

For the relief of pain, all, even the surgeons, are acquainted with the happy effect of a rectal suppository containing opium, belladonna or hyoscyamus, in sufficient doses, with iodoform occasionally.

NONSURGICAL TREATMENT.

BY LAWRENCE LITCHFIELD, M. D.,
Pittsburg.

In conjunction with the medical and surgical treatment of prostatic hypertrophy, certain physiological, mechanical, and electrical applications should be borne in mind. A patient who is beginning to suffer from or to be inconvenienced by an enlarged prostate, should religiously follow a rational diet. He should avoid coffee, alcohol, highly spiced food, strong condiments, sweets, fruits containing objectionable acids, as tomatoes, cranberries, gooseberries, and rhubarb, which render the urine irritating; and fruits which are liable to disturb the digestion, such as bananas, strawberries, and, in fact, all fruits which are marketed at great distance from where they are grown, with the exception of oranges, lemons, grape-fruit, tangerines and grapes, because an attack of acute indigestion is liable to greatly aggravate the symptoms of prostatic hypertrophy. Proteid food should be taken in great moderation, white meat, including fish which is not too fat, being preferred; beef and mutton used in small amounts and not daily;

and veal and pork, with the exception of bacon, being omitted altogether.

He should be rationally clothed, and, in spite of most clever and successful advertising, the concensus of medical opinion still favors woolen next to the skin, especially about the abdomen and pelvic organs, because of the partial insulation which it affords against sudden chilling. Great care should be taken in damp, raw weather to avoid taking cold; the feet should be carefully guarded against wetting, and the shoes and stockings changed immediately upon getting in if there is a suspicion of dampness even though it be due only to perspiration. If slippers are worn in the house they should be as high as the shoes which have been worn, and should have sufficiently thick soles to protect the feet on cold floors.

The skin should be kept active by warm baths, friction, and, in some cases, massage; the general health should be promoted by general exercise and the maximum amount of fresh air. Violent exercise or exercise to the point of fatigue as well as exercise having a deleterious local action, such as horse-back and bicycle riding, should be interdicted. It should be borne in mind that in many cases the bladder drains better in the upright position, and too much time should not be spent in bed. The hot bath taken just before retiring often mitigates the annoyance of frequent urination during the night. During the day, Professor Gouley's advice to empty the bladder whenever there is an opportunity, whether there is any desire or not, should be borne in mind. Constipation should be carefully avoided as well as all causes of sexual excitation.

I believe that in all cases with residual urine, which are seen early, the attempt should be made to restore to the bladder the ability to empty itself. And this can sometimes be done by the use of the catheter in connection with local treatment, mechanical, hydropathic, and electrical. I refer here to the use of the catheter by the physician, as in some of these cases that respond well to treatment, the withdrawal of the residual urine once daily for a short time is followed by such an improvement in the tone of the bladder that it can empty itself, and the evil day of the catheter life, when the patient is entrusted with the grave responsibility of the care and use of the catheter, may be indefinitely postponed. When using a catheter on any prostatic case, aside from the strictest asepsis, the choice of the catheter is of great importance. A "coudee" catheter, or one with an exaggerated curve, should be chosen in preference to the ordinary soft rubber catheter. If the latter is used, it should invariably have a smoothly rounded hemispherical end, and should not come to a point as do many of the soft rubber catheters on the market, as this point is capable of causing a slight traumatism when pushed against an enlarged middle lobe, and it is possible that a very minute traumatism may be sufficient to cause that alarming series of septicemic symptoms commonly called catheter fever or urethral chills. These attacks in weak and elderly patients are sometimes very severe and alarming, and when they can not be avoided they contraindicate the use of the catheter. For the same reason, if a varnished catheter is used any roughness or cracks in the varnish should cause the instrument to be discarded. Whether catheter fever is ever caused without traumatism, that is, by some reflex nervous disturbance, is a question which I will not undertake to discuss here.

There are two factors which may be instrumental in preventing the bladder from emptying itself; first, the obstruction of the enlarged prostate either by the valve-like action of an enlarged middle lobe or the pressure of enlarged lateral lobes on the deep urethra rendered tortuous thereby; and, second, the muscular weakness of the bladder wall, which is aggravated greatly when the bladder is never fully emptied, and which becomes extreme when the bladder has been allowed to be greatly or frequently distended. The object of local treatment is to diminish the obstruction by reducing the size of the prostate and increasing the tone of the bladder muscles by stimulating and tonic treatment at the same time that the muscles are given the opportunity to fully contract by the occasional use of the catheter. The methods of local treatment suggested are the passing of the largest steel sound that the membranous urethra will accommodate at intervals of five to seven days, the sound being left in position for about ten minutes; and the douching of the prostate through the rectum, the use of hot rectal injections once or twice daily, the hot sitz bath and hot fomentations, and the perineal douche either simple or alternating hot and cold water. This last is applicable only in regular hydrotherapeutic institutions, as Aix, Virginia Hot Springs, and others. The two methods of treatment with which I have had most experience are massage and high frequency electricity. Massage may have two objects: To deplete a vascularly engorged prostate, and to strip the plugs of partially hardened secretions from the openings of its glandular structure into the urethra. Whether it accomplishes any depletion can be judged only by its effect on the patient's condition and possibly by changes in the hardness and size of the prostate itself. Whether or not it empties the glandular openings can be determined by the microscope, the urine being passed in two glasses immediately after treatment.

Personally, I have seen benefit follow massage of the prostate only in those cases in which the first urine passed showed to the naked eye or to the microscope these casts from the prostatic tubules. The patient should present himself for massage with the bladder as full as convenient, as the prostate is then more easily reached and the full bladder offers material assistance to the manipulations. It is necessary to push the perineum forward with considerable force in order to reach the entire prostate even when the bladder is full. When the bladder is empty it is sometimes impossible. In strong patients the massage can be best given with the patient standing, but in weak patients and those liable to dizziness or faintness it can be given in the Sim's position. I have seen striking improvement follow massage of the prostate, not only in the condition of the gland itself, but also and especially in the subjective symptoms; as, mental depression, lack of energy, etc. The knee-chest position I have seen recommended for prostatic massage, but I believe it very unsuitable, as in some cases the prostate would recede considerably in that position. Massage is said to be contraindicated by interstitial changes which are evidenced by a very hard prostate. I have, however, never seen any ill effects follow the tentative application of massage. The early stage, however, of prostatic enlargement, when the glandular structures are most affected, and the prostate feels soft and boggy and is subjectively quite tender, is the condition when most benefit is expected from massage.

As to the use of electricity, Dr. Shoemaker reports brilliant results from the use of the Galvanic current, ten to twenty milliampères being applied morning and evening for from ten to twenty minutes with a special electrode which he has devised for that purpose under the name of "prostatic electrolizer," the electricity being supplied by a small wet battery, the patient treating himself. My own experience with electricity in these cases has been confined to the use of high frequency currents supplied from an Oudin resonator operated by a coil. It has seemed to me that the patient has been at least subjectively benefited by this treatment. The application lasts from five to ten minutes and is made as strong as the patient can bear without inconvenience. I show the electrodes which I use for this purpose. The best, probably, and certainly the most comfortable for the patient, are those in which the middle part of the tube has an air jacket preventing the electricity from being discharged before reaching the parts which are being treated.

SURGICAL TREATMENT.

BY O. C. GAUB, M. D.,
Pittsburg.

The surgical treatment of the hypertrophied prostate gland at the present day consists in its removal, attacking it suprapubically or by way of the perineum, the so-called high and low operations.

The procedures aiming at the removal of the supposedly obstructing bar, by cutting or burning instruments, as typified by the Bottini operation, are used to a very limited extent. In the hands of a few operators the results have been better than those obtained by themselves from the radical operation, either high or low. It is safe to say that the great majority of surgeons fear the Bottini operation on account of the greater mortality, on account of it being done in the dark and therefore inexact, and, thirdly, the permanency of cure is not assured, as it not infrequently happens that the operation must be repeated.

An effort to elevate the base of the bladder and thus eradicate the retroprostatic pouch, by attaching the fundus of the bladder to the anterior abdominal wall, as is done in a suprapubic cystostomy, is wrong in conception and futile in practice, as is likewise the cutting of the puboprostatic ligaments in an endeavor to allow the gland to sag downward and in this manner lower the internal urethral orifice,thus eliminating the symptoms of the hypertrophied prostate.

Surgeons are agreed that the gland itself must be removed, and, as to the route adopted, it is a matter of choice with the individual; the tendency, however, is toward the low operation.

The very large prostate, so diagnosed by rectal palpation and increased length of urethra, with a probably enlarged so-called median lobe, presents the characteristics of a gland more easily removed by the high operation.

The small, nodular, fibrotic prostate is undoubtedly best removed through an incision in the perineum.

The method of removing the gland by enucleation through a median perineal incision compares with the enucleation through a suprapubic incision or Treger's operation. In both, anatomy and pathology are ignored. No account is taken of the prostatic urethra; the ejaculatory ducts are torn away, thereby inviting a postoperative epididymitis; from the standpoint of pathology, we hardly pause to consider that (Albarran).

Young and others are finding ten per cent. of the small, hard glands presenting evidence of cancerous change, and, lastly, the simple enucleating operations are open to the same criticism as the Bottini procedure,—of being performed in the dark.

The precise scientific and demonstrable operation is the conservative perineal prostatectomy as elaborated by Proust in France and Young in America. Each step of the operation is done under the guidance of the eye, is exact, and, if a frozen section of the gland shows any malignant change, the type of operation may be changed to meet the new pathology. The smaller details of technic will be of no interest in this symposium.

I can not leave this subject of the surgery of the hypertrophied prostate without a word of caution. The facts that a gland is enlarged, is producing symptoms of obstruction, and that medical remedial agents are ineffectual, are not of themselves sufficient reasons that a radical operation must be resorted to immediately. The general condition of the patient must be considered, his resistance, which means the state of the cardiovascular system, the gastrointestinal and the nervous systems, but above all the state of the kidney function.

There is a time for the radical operation and the surgeon must attempt to create that time by subsidiary measures.

In conclusion, let it be said that the best operation for the removal of the prostate is that one with which the surgeon is most familiar, be it the high or low one, the mortality is practically the same in both, convalescence following the suprapubic route is a little prolonged, the permanency of cure is equal, postoperative sequelæ occur at times in both, but to the detriment of neither.

As these unfortunate sufferers learn that relief may be afforded them, by means of a comparatively safe operation, the time is fast approaching when resort to operation will be earlier, with a consequent decrease in mortality and postoperative pathology.

PERMANENT SUPRAPUBIC DRAINAGE.

BY R. W. STEWART, M. D.,
Pittsburg.

The surgeon is not infrequently confronted with cases of prostatic obstruction, where, owing to advanced senile changes, failure of the renal function or profound exhaustion from loss of sleep, and the intolerable distress that is associated with the advent of cystitis, an operation of the magnitude of a prostatectomy would be equivalent to an execution. These cases, as a rule, have exhausted all the nonoperative methods of relief and the opportunity for a radical cure has been allowed to pass. They have reached the terminal stage of the disease and, driven by suffering, the patients clamor for relief which can not be granted by further use of the catheter, and the mortality from a major operation would evidently be so high as to preclude that from consideration.

It is in this class of cases I have adopted a method of suprapubic drainage by a simple procedure scarcely deserving the name of an operation. It is almost bloodless, it can be performed in from two to five minutes and need not confine the patient to bed more than two or three days, and it is not associated with leakage of urine or sloughing of the adipose tissues.

The technic of the operation is to introduce a sound with a larger curve than the ordinary sound, and depress the handle until the point can be felt immediately above the symphysis pubes. An incision of one and a half inches is made over it, exposing the recti muscles which are separated with retractors. The bladder is pierced by a tenaculum and the sound thrust through the bladder wall until its tip projects into the wound. Over the tip of the sound, a piece of rubber drainage tubing is firmly fixed and the sound withdrawn, leaving the tube within the bladder. The tube fits closely to the opening of the bladder so that leakage does not take place. It is held in position by a safety pin and adhesive strips. At the end of a week the tube is withdrawn and the permanent apparatus applied which collects the urine into a bag suspended from a strap around the waist. The patient is instructed to empty the bag two or three times daily by unscrewing a cap for that purpose. Once a day he should remove the whole apparatus and thoroughly cleanse it.

I have employed this method of draining the bladder for about thirteen years and present it to you as a means of affording relief in cases that would otherwise be hopeless.

DISCUSSION.

Dr. J. H. Anderson spoke of the many calculi found in connection with enlarged prostate, even when unsuspected; of the importance of emptying the bladder gradually when drawing off the residual urine, and of the way the mortality after these operations has decreased. He prefers perineal prostatectomy.

Dr. J. D. Singley spoke of the two types of prostatic hypertrophy, the fibromatous and the adenomatous; of the importance of early operation and of the value of the exaggerated lithotomy position, making the prostate more accessible.

Dr. R. E. Brenneman mentioned the scantiness of literature on this subject. He referred to the importance of a knowledge on the part of the operator of the anatomy of the prostate; to the three types of enlarged prostate (large and soft, small and hard, and mixed types): to the diagnosis of this condition from stone; and to the history of the operations. He called attention to the true position of the sphincters of the bladder. He prefers the perineal operation as then he can see what he is doing. This operation is certainly improving since Young of Boston reports seventy-five operations without a death. The external sphincter was not properly described till the last edition of Gray's anatomy.

Dr. Bixler spoke of the importance of proper preparation of the patient for the operation and the after treatment, and of the growing use of spinal anesthesia.

Dr. Hersman asked how the treatment of this condition by castration is now regarded.

In closing, Dr. Lichty spoke of the paucity of literature on prostatic hypertrophy, and of the abandonment of castration as futile.

Dr. Gaub, in closing, said he thought the forming of the hypogastric meatus (as described by Dr. Stewart) was proper in the advanced cases where immediate relief was necessary. He said this operation was ingenious, avoided the cellulitis (which the perineal operation starts), and is useful, but the patients can not keep the drainage apparatus properly clean, and the artificial meatus *will* close.

Reports of County Societies.

DAUPHIN—December.

The regular monthly meeting of the Dauphin County Medical Society was held December 4, 1906, at the building of the Academy of Medicine.

A practical paper on "Acute and Chronic Middle-Ear Suppurations from the Standpoint of the General Practitioner" was read by Dr. John F. Culp.

The etiology and treatment of this form of middle-ear trouble were particularly considered. The writer of the paper spoke of the value of routine examinations of the ear in those diseases affecting the upper respiratory tract. In small children, where, because of the tender age of the patient, symptoms are misleading, is such an examination especially necessary.

In such diseases as typhoid fever and pneumonia where mental hebetude or stupor is so often present, it is well to make a frequent examination of the ear drums. The importance of cleansing the nose and nasopharynx as a preventive of middle-ear complications was especially dwelt on. The abortive treatment of acute inflammation was then considered. If, after six or eight hours of such energetic treatment as advised, relief is not obtained and the ear drum is bulging, prompt paracentesis should be done under light anesthesia. The old saying, "Nature does all things well" does not apply to the opening of the ear drum. The opening made here by Nature is nearly always too small and too high up for efficient drainage.

The importance of free drainage of the middle-ear cavity in the prevention of mastoid complications was emphasized.

In chronic suppurations of the middle ear it was shown how the nature of the discharge usually gives a clue to the character of the pathologic process present.

Both the dry and the wet methods of treatment for this condition were considered with the contraindications and limitations of each.

A strong plea was made for the family physician to not only give specific instructions for such home treatment as was necessary but also to instruct in its every detail. The careful, systematic and patient treatment of these chronic discharging ears will generally bring success, while a haphazard treatment with neglect of detail means failure.

A general discussion of the paper was indulged in.

C. R. PHILLIPS, Reporter.

ELK—DECEMBER.

A meeting of the Elk County Medical Society was held in the Ross House, Ridgway, December 13. The members present were: Drs. Bevier, Earley, Flynn, Heilman, Leitzell, Livingston, McAllister, Mullhaupt, Rankin, Sharp, Smith, Williams, and Wilson.

Drs. Smith, Heilman, and Bardwell of Emporium were appointed a committee to arrange for the annual meeting on the second Thursday of January.

It was proposed that during the coming year a series of quizzes shall be held at each alternate meeting.

The paper on "Health and Disease" was read by Dr. McAllister. "The child has an inherent right to be born of good parentage,—physically, morally, and mentally sound. The mother should be able to nurse her child; it is a moral obligation. Woman must get back to the physical condition where she will be able to do so.

"No person has a right to infect another with syphilis or gonorrhea and the law should hold the guilty person responsible for financial damages. The contracting parties shall show at the time of marriage that they are free from syphilis and gonorrhea or other serious infectious disease.

"The consumptive should be under such legal supervision or restraint that all the sputa or other contaminated dejecta can be disinfected or destroyed. Clean, fresh air is essential to good health. The air passages must be placed or kept in such condition that the air can be taken in sufficient quantities and be heated to the body temperature and moistened to saturation. All useless sources of waste or drain upon the nervous system, such as eyestrain or muscle imbalance must be corrected. All chronically inflamed organs must be relieved; and all sources of irritation, as an adherent prepuce, hooded clitoris, intestinal parasites, or a fissured or ulcerated rectum, must be relieved. Large quantities of water daily are essential to the elimination of waste from the body. Proper exercise is the best corrective of faulty metabolism. We ought, on the whole, to live much better physical lives than we are doing."

J. C. MCALLISTER, Reporter.

LANCASTER—JANUARY.

The regular meeting of the Lancaster City and County Medical Society was held in Malta Temple, 40 West King St., Lancaster, with Dr. L. K. Leslie in the chair.

Present: Drs. Appel, Atlee, Barsumian, Bowman, Breneman, Brenholtz, H. R. and L. M. Bryson, Cassel, M. L. Davis, Dissler, Gerhard, Harter, Hartman, G. B. and J. D. Hershey, J. S. Kendig, Kennedy, G. C., G W. and J. W. Kinard, King, Kohler, Kreiter, Lehman, Leslie, McCaa, Martin, Miller, Mitchell, J. L. Mowery, Musser, Newpher, Ringwalt, J. P. and P. J. Roebuck, G. R. and T. M. Rohrer, H. B. Roop, Stahr, Sultzbach, Shaffer, Trexler, H. V. Walter, I. M. Witmer, and W. E. Ashton of Philadelphia.

The minutes of the preceding meeting were read and approved.

Reports of officers and committees were as follows:—

REPORT OF SECRETARY.

Membership, 135. New members, 7. Lost, 4: 2 by death, 1 transferred to Philadelphia, 1 for not complying with by-laws.

During the year 10 business meetings were held, the attendance being good: highest, 52; lowest, 20; average, 40.

At these meetings 15 papers were read and discussed as follows:—

1. Some disorders of the Urethra and Neck of the Bladder, Dr. G. E. Shoemaker, Philadelphia.
2. Obstetrics, comprising the following papers:—

  1. Treatment of the Pregnant Woman, Dr. A. V. Walter.
  2. Treatment of the Mother and Child, Dr. J. P. Roebuck.
  3. Extrauterine Pregnancy, Dr. T. B. Appel.
  4. Puerperal Eclampsia, Dr. G. W. Berntheizel.
  5. Placenta Prævia, Dr. J. W. Houston.
  6. Postpartem Hemorrhage, Dr. T. B. Appel.

8. Adulteration of Drugs and Other Subjects Relating to the Profession, Dr. J. L. Zeigler.
9. The Effect of the Present State Medical Law on the Busy Physician, Dr. J. H. Musser.
10. The Manufacture of the Clinical Thermometer (stereopticon lecture), Rep. Taylor Brothers.
11. Plasmodium Malaria, Dr. D. G. McCaa.
12. Obstetrics, including Instructions to Mother and Nurse, Dr. J. L. Atlee.
13. Relief of Reflex Symptoms, Headache, etc., by Correction of Refractory Errors, Dr. G. R. Rohrer.
14. The Hyperdermic Treatment of Syphilis, Dr. C. P. Stahr.
15. The Place of Veratrum Viride in Therapeutics, Dr. H. C. Wood, Jr.

During the year many interesting cases were reported and specimens exhibited.

The amount of $482 was received by your secretary as dues and paid over to the treasurer. Respectfully submitted,

Park P. Breneman, Secretary.

REPORT OF TREASURER.

1906.	Dr.	
Jan. 1, To Balance,		$ 56.92
Mar. 8, To check received—banquet,		130.00
Dec. 31, To dues collected during year by P. P. Breneman, Sec.		482.00
Total		$668.92
	Cr.	
By banquet exclusive printing and postage	$167.90	
By Treasurer of Pennsylvania State Medical Society	236.25	
By San Francisco Relief Fund	100.00	
By expenses of society paid during 1906	81.12	585.27
Balance		$ 83.65

Unpaid bills in hands of secretary, $90.4

Respectfully,

George R. Rohrer, Treasurer.

The report of the trustees showed certificates of deposit amounting to $1,664.76.

The resignation of Dr. A. M. Underwood was received.

Drs. John M. McCanna, Mount Joy, and Walter K. Baer, Lancaster, were elected to membership.

Election of officers resulted as follows: President, Dr. George R. Rohrer; vice-presidents, Drs. C. P. Stahr and B. F. Good; secretary, Dr. P. P. Breneman; treasurer, Dr. T. B. Appel; censors, Drs. G. W. Berntheizel, O. Roland, J. Mitchell; trustees, Drs. A. G. Bowman, J. H. Musser, J. J. Newpher; reporter and librarian, Dr. P. P. Breneman.

Dr. W. E. Ashton of Philadelphia read a very interesting paper on "Gastroptosis, with Special Reference to the Diagnosis, Causes, and Treatment." The paper was illustrated by several Röntgenographs of the stomach in different positions, taken after the introduction of an ounce of bismuth. A vote of thanks was extended to Dr. Ashton for his able paper. Remarks were made on the paper by Drs. Atlee and Breneman.

Drs. T. B. Appel, T. M. Livingston, and J. J. Newpher were appointed a committee to draft a suitable memorial to Dr. J. L. Zeigler, and report at the next meeting.

Park P. Breneman, Reporter.

LEHIGH—December.

The regular monthly meeting of the Lehigh County Medical Society was held at Allentown, in the School Administration Building, Tuesday, December 11, at 2 P. M.

The members present were Drs. Arner, Backenstoe, Bean, Butz, Cawley, Dickenshied, W. B. Erdman, Fetherolf, Guth, Hausman, Hendricks, Henry, Herbst, Hertz, Hornbeck, King, Kline, Mack, Martin, Miller, Otto, Pflueger, Richards, Ritter, F. C. Seiberling, and Weaber.

Dr. J. Fred Wagner was elected a member.

The nominating committee recommended nominees for the various offices for 1907.

The following was the program: "The Diagnosis of Diphtheria," W. A. Hausman, Jr.; "The Therapeutic Application of Some of the Most Important Drugs," C. S Martin; "Remarks Concerning the Early Diagnosis of Tuberculosis," M. J. Backenstoe. W. A. Hausman, Jr., Reporter.

MONROE—December, January.

At the December meeting of the Monroe County Medical Society Dr. Joseph F. Miller of Bushkill was elected a member.

Dr. L'Amareaux read a paper on "Adenitis," which was discussed by the members.

By a special invitation from the management of the Stroudsburg Hospital, the Monroe County Medical Society held the January meeting in its institution. After inspecting the different sections, there was a general feeling among the members that it was a needed enterprise and the foundation of a greater institution.

The business meeting was held in the spacious reception room, at which the following members were present: Drs. Angle, Gregory, Gruver, Hagenbach, Henry, L'Amareaux, Levering, Logan, Miller, Parsons, Rhoads, Singer, Smith, Travis, and Dr. Thomson of Scranton.

The officers for the ensuing year were elected as follows: President, Dr. George H. Rhoads, Tobyhanna; vice-president, Dr. C. S Logan, Stroudsburg; secretary, Dr. W. E. Gregory, Stroudsburg; treasurer, Dr. J. A. Hagerman, Sciota; reporter, Dr. N. C Miller, Stroudsburg.

Dr. W. L. Angle of East Stroudsburg was elected a member of the society.

The meeting then adjourned to the dining hall where dinner was served to the members of the society and their guests which included representatives of the press.

At the close of the dinner Dr. Rhoads, the retiring president, delivered his address. He said that although many ideas had been exchanged and much good accomplished, he regretted that but little new had been advanced. He also hoped his successor would have better results during his term. A subject on which he spoke very disparagingly was the habit of permitting to be printed in the secular press accidents or diseases in connection with the name of the attending physician.

Short speeches were made by several of the visitors.

The society then reconvened in the reception room and after finishing the routine work, adjourned.

N. C. Miller, Reporter.

NORTHAMPTON—November.

The regular bimonthly meeting of the Medical Society of Northampton County, was held at the Sun Inn, Bethlehem, November 16, 1906. The meeting was called to order by the president, Dr. A. D. Reagan.

The death of Dr. J. F. Raub of Washington, D. C., formerly of this county, and a member of this society, was reported. A committee was appointed by the president to prepare suitable resolutions.

The censors reported favorably on the application of Dr. Harry B. Fralie of Chapman's Quarries, and he was elected a member of the society. Applications of three other physicians were received and referred to the censors.

A committee of three was appointed for the purpose of preparing resolutions bearing on the proper fees for insurance examinations for "old line" companies, the resolutions to be presented at the next meeting for consideration.

The annual assessment of the Medical Society of the State of Pennsylvania was ordered paid.

The society then adjourned to the dining room for dinner, after which a trip was made through the Bethlehem Steel Works.

Visitors present were Dr. Chase of Boston, Mass., Dr. Newton and Dr. Schmoyer of Bethlehem.

J. J. Quiney, Reporter.

PHILADELPHIA—November 28, December 12.

A stated meeting of the Philadelphia County Medical Society was held Wednesday, November 28, with the president, Dr. Charles K. Mills, in the chair.

"Cataphoric Sterilization in Cancer: Reports of Cases, and Results." Dr. G. Betton Massey reported the final results of 79 cases of cancer (carcinoma and sarcoma) treated by electrochemical sterilization (zinc-mercury cataphoresis) prior to January, 1905, and the provisional results of 61 cases treated since that date at the Oncologic Hospital by the same method.

Of the first series of cases 66.6 per cent. of epitheliomata, 15.8 per cent. of carcinomata, and 30 per cent. of sarcomata show no evidence of disease after periods varying from twelve to three years.

Of the second series of seventy-nine cases the results at the end of the first year are no evidence of disease showing in 81 per cent. of epitheliomata, 31.8 per cent. of carcinomata, and 14.2 per cent. of sarcomata.

The operative mortality was eight cases, all in the first series, equaling an operative mortality in all cases treated of a little over five per cent. The cases treated in the first series particularly were of the most desperate character, a large proportion of the failures being due to unsuspected preëxisting metastases.

The true field of the method was said to be in the destruction of small growths at their first manifestation.

Dr. Oscar H. Allis, in a paper on "Congenital Dislocation of the Hip," objected to the term congenital as it was vague and misleading and too often confounded with embryonic. He thinks it would be more nearly exact to speak of such conditions as embryonic when they occur during the first month and a half, and use the term fetal for all dislocations occurring during the remainder of the term of gestation. He emphasized the fact that embryonic defects are incapable of repair, that the surgeon can patch up but can not rectify the deficiencies, and illustrated his remarks by harelip, exstrophy of the bladder, and by armless and legless births. He contrasted the defects of the embryonic stage with injuries sustained during the fetal stage. As the latter occur in perfectly formed individuals they are susceptible of complete repair, he argues that, since so-called congenital dislocations are susceptible of perfect cure, they could not be classed among embryonic defects. If they are not embryonic they must occur some time during the fetal term, the most likely time being during the active stage of labor. He believes that the uterine contractions, which are capable of driving a fetus through a contracted pelvis and often of rending its walls by efforts to expel the contents, are sufficient to dislocate the hips if the contractions catch the knees at right angles to the pelvis. He reviewed the methods of Dr. Lorenz by which the dislocated thigh is first hyperflexed, then hyperextended and finally hyperabducted, with the result of tearing in two any and every opposing muscle or fascia or obstruction. The limb is then strongly extended longitudinally by an assistant, while the head is driven into the socket by the surgeon by means of direct pressure on the great trochanter.

Dr. Allis then exhibited a lever with a spring balance which he uses in making perpendicular traction without any preliminary laceration of tissues. The advantage of the lever and spring balance over manual traction is stated to lie in the fact that the surgeon can see at every stage of the procedure the amount of traction he is exerting and, by means of a lever, continue the traction with perfect ease for an indefinite time.

Dr. Stephen B. Tracy, in presenting a

paper on "A Study of the Urinary Analysis of Operative Cases and the Treatment of Complications Arising from Kidney Insufficiency," emphasized the importance of measuring the urine and making a careful chemical and microscopical examination for several consecutive days both prior to, and immediately after operation. He had studied the urinary reports of 228 gynecological cases which were divided into those on whom a celiotomy was performed, and those on whom a plastic operation only was performed. Many patients had both a celiotomy and a plastic operation at the same time and they were classified as celiotomy cases. When the patients were admitted to the hospital, it was found that 34, or 15 per cent., had hyaline, granular, or hyaline and granular casts in the urine. Of 105 patients on whom only a plastic operation was performed, 29, or 27 per cent., had casts in the urine following operation. In 123 celiotomies 46 patients, or 37 per cent., with casts were found. Of the 228 patients who were given a general anesthetic, 75, or 33 per cent., suffered from some change in the kidneys, as was evidenced by the presence of albumin, or epithelial, bloody, granular and hyaline casts. Seven patients had casts in the urine prior to, but not after operation. It was claimed that occasionally a patient would collapse during the performance of, or immediately after, an operation, and that a condition described by some surgeons as secondary shock was frequently due to kidney insufficiency.

When making the test for glucose with the ordinary solutions of copper, it was pointed out that care should be taken to distinguish between the reaction caused by the absorption of coal-tar products and also from impure water used to dilute the solutions of copper.

A stated meeting of the Philadelphia County Medical Society was held Wednesday, December 12, at 8:30 P. M., the president, Dr. Charles K. Mills, in the chair.

In a symposium on the "Suppression of Quackery," the first paper was on "The Relation of the Physician to the Patent Medicine Curse," by Mr. Edward Bok of the *Ladies' Home Journal*, who pointed out that in two distinct ways the medical profession to-day is obstructing the efforts of the laymen in the fight against patent medicines. Since the life of the nostrum business depends upon the publicity which can be given it, in the fight against it one of the first efforts has been to ascertain to what extent the press can be depended upon to exclude patent medicines. To-day, scarcely a prominent monthly magazine accepts patent medicine advertisements; the same is true of the prominent weeklies and of the farm journals; pressure is being brought to bear upon the religious press; and of the newspapers there are forty-three that absolutely refuse patent medicine advertisements. All classes have been assisting except one—the physicians. One notable instance, however, of aid from the medical world is that of the *Journal of the American Medical Association*. The average medical paper reeks with patent medicine advertisements as reading notices and abstracts. The very papers that should be first to cleanse their columns are the greatest delinquents in this respect. As a result, when the newspapers are asked to exclude patent medicine advertisements, the argument advanced is that the medical press admits them. To pass resolutions is easy and comfortable, and about as ineffective as comfortable. Organized protests amount to little, but individual protest has positive force. There are two ways in which this can be exerted: as readers and subscribers, physicians should insist that the advertisements be excluded; and as practitioners, they should stop prescribing the nostrums and thus make the advertisements unprofitable.

The direct coöperation existing between the physician and the patent medicine curse is nothing less than appalling. Mr. Bok has obtained evidence of the unintelligent prescribing of patent medicines on the part of physicians which, if published, would cause unrest and distrust on the part of the public not pleasant to contemplate. Mr. Bok quoted Dr. Jacobi and Dr. Billings in showing an alarming increase in the prescribing of patent medicines by physicians. That there are some good preparations, and that a physician, after a complete understanding of his case, might feel justified in prescribing such good preparations is undoubtedly true. Whether such a course is detrimental to scientific medicine, is a question for the physician personally to decide; but he comes perilously near the criminal line in prescribing a preparation of which he either did not know the ingredients or knew them wrongly. This, Mr. Bok asserts, prevails in the medical profession today to an extent almost impossible to believe. Of 100 prescriptions seen by Mr. Bok forty-two contained a proprietary drug or article, in part or in whole. Selecting thirty of these he called on the physicians who had written them, and only two could give him an accurate analysis of the proprietaries or the "ethicals" as they were termed. One of the prescriptions calling for a certain headache remedy to be given a woman who had weak heart action nearly had a fatal result. The physician had told the woman that it contained a few grains of antipyrin. In reality it contained sixty-one and a half per cent. of acetanilid. The physician's excuse for his assurance was the statement of the manufacturers who were declared to be reputable people. This statement, Mr. Bok happened to know, was written by a man who never had seen a medical college, who was a real estate operator, and whose word no reputable physician would accept if he knew it. Another prescription called for a tonic said to contain quinin, beef and iron, and to be free from alcohol. An analysis proved the absence of beef and iron, but the presence of twenty-two per cent. of alcohol. That the physicians confessed ignorance of these analyses did not, in Mr. Bok's opinion, excuse them. Other instances were given to show that the physicians are doing precisely that which laymen are asking the public not to do—not to use patent medicines because they do not know what is in them. That the prescribing of such remedies has increased, is shown by the fact that, in 1905. on a basis of two or three thousand prescriptions, the percentage prescribing patent medicines was forty-one. while thus far in 1906 it is forty-seven per cent. Through the work of the Council of Pharmacy and Chemistry, opportunity is given to learn the ingredients of the medicines prescribed. If a physician has not time to ascertain these, Mr. Bok contends that he has no right to prescribe the preparation. While assembled to discuss the question of the "Suppression of Quackery," a more appropriate topic in his opinion would be "The Suppression of the Physician in Aid of Quackery."

Thomas W. Barlow, Esq., of the Philadelphia Bar, in presenting a paper on "Quacks and Their Relation to the Practice of Medicine," remarked that it was actionable at common law to speak of a physician as a "quack," and that the term had been one of reproach for many centuries. Partridge, a quack of 1708, was a cobbler, astrologer, almanac maker and quack. Of him Swift had said:

"Weep all you customers who use
His pills, his almanacs and shoes."

Smith went about England in the eighteenth century dressed in black velvet and offered to cure any disease for a sixpence. His coach, drawn by six bay horses, had upon it a coat of arms with the motto "*Argento Laborat Faber*" (Smith works for money).

Mr. Barlow defined a quack as one who pretends to have skill or knowledge which he does not possess. He quoted Dr. Johnson as having said over a century ago that a doctor of medicine is a physician under the protection of the laws and by the stamp of authority. In defining the practice of medicine within the meaning of the law he quoted from the opinions of the courts of the different states. The power of the states to regulate the practice of medicine, has been universally upheld. The Supreme Court of Pennsylvania describes this as a just and proper exercise of the police power of the state. Regarding the legal situation in Pennsylvania, he said that the law declines to recognize osteopathy, electropathy and Christian science as schools of medicine, and yet holds their practitioners exempt from offense if in attempting to heal they use neither drugs nor instruments, because "it is doubtful," as one court says, "if the legislature has the right to restrict the choice of the citizen in a matter concerning only himself." This Mr. Barlow designated as a dangerously illogical and foolish situation. He regarded it as necessary to prove that the prevention and cure of disease is not a matter concerning only the citizen himself. He urgently insists upon the necessity for a further extension of the police power of the state regarding the prevention and cure of disease and the intervention of surgery, so that the public health may be still further safeguarded and more exact conditions be required "to enforce the social compact for the protection of life and health and the general weal of the community." He pointed out the public menace of a system which permits the devotees of osteopathy and Christian science to make contracts to heal or cure or relieve any disease whatever without requiring of them any knowledge protecting the people against the disaster of contagion, and of not holding such healers liable for the infringements of the laws of the board of health. He asserted that the law should require of a practitioner of medicine and of all persons and agencies proposing or promising to treat or cure disease or deformity, a comprehensive knowledge of human anatomy, human physiology, pathology, obstetrics, hygiene, materia medica, and the practice of medicine and surgery.

Mr. George W. Ochs, publisher of the Public Ledger, in a paper on "Journalism and Quackery," said the relation that journalism bears to quackery is not dissimilar to that borne by the medical profession, with the distinction that the latter is fortified by a definite code of ethics and is enabled to discriminate by expert knowledge. The honest journalist attempts to discriminate, and in doing so makes great pecuniary sacrifices, yet the medical profession, as a rule, does not aid him to any extent. The chief agency for the sale of nostrums and the mainstay of the quack is the newspaper. His life is the newspaper; his sole source of sustenance, his single means of success, his only hope of existence is publicity—its widest opportunity and most effective agency being the newspaper. While there alone the trouble should be attacked by those in sympathy with the purpose, it should be remembered that a newspaper has but two sources of revenue, advertising and subscription, the latter being a negligible quantity. In attempting to curtail the advertising, the prudent publisher must act with discretion and conservatism. The approval of a right thinking community does not liquidate the multiplicity of enormous expenses of a newspaper; unless, forsooth, public opinion be so educated that it will aid the journalist who makes these sacrifices by moral support, by persuading the discriminating public to buy that newspaper, and by systematically avoiding all other newspapers that insult intelligence and decency by a contrary course. Mr. Ochs suggests that a union of all the medical forces into a well organized, compact, efficient instrument to conduct the campaign by systematic, careful, persistent and continuous enlightenment concerning the real promoters of the evil, and the effective means of remedying it, will achieve triumphant success. The self-respecting newspaper will not commercialize its ethics any more than the honest practitioner. The absence of the advertisements of the nostrum vender and the quack from one newspaper is public notice that this sort of tainted revenue has been rejected by the publisher; their appearance in another is public notice that it seeks this business and that its journalistic code is written in different ethics. Thus the contrast stands clearly forth, and the offender, if such he be, may be pilloried in the market place to be penalized, if the public so decrees. Enlightenment, Mr. Ochs said, can best come by the influence of the medical profession. Hence it lies with the profession, if effective results are sought, to concentrate all its energies and employ all its devices to awaken and vitalize this impulse of public opinion, which, once aroused, is irresistible.

In a paper on "What Can the Organized Medical Profession Do to Suppress Quackery?" Dr. Henry W. Cattell first called attention to the duty of the profession to remove all causes of reproach in this matter from among its own ranks. Among these were mentioned the running of medical schools on a purely commercial basis and the lowering of standards. A contribution of money to a medical school too often secures a coveted teaching position in the institution. The securing of an appropriation from the legislature for hospitals, to say nothing of the illegal methods often employed to secure such appropriations, was mentioned as another evil. He contended that any hospital largely supported by funds from the state treasury should, under proper restrictions, permit others than those officially connected with it to treat their pay patients within its walls. He asserted that there are trusts in medicine as there are in every day life, and pooling and rebates, and mergers are done as effectually by the medical profession as by our railroads and other soulless business corporations. He arraigned the medical profession as responsible for the enormous sale of such preparations as Vin Mariani. In this preparation, which a few years ago contained cocain, in order to permit its sale under the laws of Pennsylvania, the ingenous manufacturer had converted the cocain into bases. Thus, while bringing his product within the law, he was distributing dangerous ingredients. Much could be done to correct these evils, it was claimed, by a united medical profession. It should make no difference to what school of medicine a member of the county medical society may belong, provided he be of good moral character, has passed a competent national board of medical examiners, and does not designate himself, either in public or in private, as homeopathist, osteopath, eclectic, or Christian scientist. Then would it be possible to effectively endorse the movement advocated by Professor Norton of Yale for the formation of a National Bureau of Health whose head shall be a member of the President's cabinet, and, a society such as the recently formed Public Health Defense League would no longer be a necessity.

Dr. Henry Leffmann read a paper upon "Deceptions in the Chemical Formulæ of Nostrums."

Dr. John B. Roberts in opening the discussion stated his belief that the people's resource to quackery is due to: (1) An erroneous belief that for every disease there is a special medicinal remedy which will cure it. (2) The lying advertisements in secular and religious newspapers, published by editors, often clergymen, who, if intelligent and educated, must know that they are disseminating untruths. (3) The unjustifiable use by doctors of secret nostrums of whose components they are ignorant. (4) Ignorant or careless physicians who are unable to give their patients such skillful treatment as modern medicine is able to furnish. (5) The inordinately high fees of certain skillful medical practitioners, which render their services unattainable by many and lead to the belief that all doctors of ability are costly luxuries.

The first cause was said to be due to the ignorance of the public in such subjects as physiology and the value of sunshine, fresh air, good water, exercise, and hygienic and decent conduct.

The second is due to the love of money, however tainted that money may be. The third and fourth were said to be largely due to the former existence of many low grade medical schools, some of which still exist. The fifth was regarded as due to a lowering of professional standards to a commercial basis, so that to some doctors the size of the fee has become more important than professional honor and the alleviation of human suffering.

Dr. S. Solis Cohen agreed with Mr. Bok and Mr Ochs that the medical profession should bring their united weight and individual effort to bear upon the publishers of medical journals and upon the publishers of daily newspapers. Following the plan of the Consumers' League of publishing a "white list" of manufacturers whose goods are recommended for patronage, it would seem to him perfectly proper for the Philadelphia County Medical Society to publish a list of the daily newspapers of Philadelphia which it recommends for patronage by its members and the public. It need not be said that such and such a paper ought not to be bought, but that a certain other paper is recommended. Regarding the medical press he thought the members of the profession owed it to themselves, never to purchase nor to contribute to medical journals which violate the ethical standard of the profession in the acceptance of nostrum advertisements.

In regard to the point taken by Dr. Cattell, each physician should examine his own daily practice and if he finds that he prescribes remedies concerning which he does not know the composition, he should at once correct the practice. Though not believing that so high a percentage as that quoted of the physicians of Philadelphia prescribe nostrums, if such fact exists, he declared it to be the duty of the county medical society to exercise its discipline over those members.

Dr. Henry Beates emphasized the statement that many so-called physicians prescribe quack nostrums because of ignorance of the art of writing prescriptions, and deprecated the fact that medical colleges graduate a large percentage of men coming under this classification. Illustrative of the ignorance of some of the graduates of medicine he cited an incident of a recent session of the State Medical Examiners. In answer to an examination question, the would-be practitioner of medicine had written, "We have two kinds of electricity, sporadic and foradic. Sporadic electricity is used intermittently and foradic is used continuously." Of nitrate of silver which the same aspirant believes to be a fluid, he would administer a dose of "from one to two drops." Other similar examples were given. Dr. Beates suggested the advisability of putting upon a screen such illustrations of the dense ignorance of some of the graduates in medicine side by side with the diplomas showing the signatures of the men allowing them to graduate. Such instances, he thought, explained the prescribing of quack remedies by so many doctors Another contributing factor to this prevalence is the inexcusable apathy of individual members of the profession. There should be organization of the medical profession with a definite purpose against quackery and in a protest against medical colleges graduating incompetent men.

Dr. Lyman F. Keebler, assistant to Dr. Harvey W. Wiley of the government's bureau of chemistry, spoke of the work in the laboratory at Washington and gave many instances of the deceptions attempted by the manufacturers of nostrums and of prepared foods which had been detected in the enforcement of the pure food and drug law.

Dr. George Erety Shoemaker upon the subject of medical journalism said it should be understood that medical journals bore the same relation to the publishers as the daily newspaper, being published for the purpose of making money, and that a sharp distinction existed between the business end and the editorial end. There was, fortunately, one medical journal in the United States founded and controlled by the medical profession, *The Journal of the American Medical Association.* Reference was made to the splendid stand taken by *The Journal* upon the subject of nostrums.

Dr. John Q. McDougald expressed his gratification at hearing Mr. Barlow's explanation of the law and his opinion of the need of law governing the practice of medicine. He cited a glaring instance of a quack doctor practicing without restraint of the law.

R. MAX GOEPP, Reporter.

SCHUYLKILL—DECEMBER.

The Schuylkill County Medical Society met in regular session at Bergeman's Hall, Pottsville, December 4, 1906, with the president, Dr. J. Lewis Hoffman, in the chair. Members present: Drs. Bowman, Bronson, Fleming, A. H. Halberstadt, Hoffman, Lenker, and Santee.

The minutes were read and approved. The communication from Mr. Ed. Wildermuth, in which he called the attention of the society to the matter of rent for the P. O. S. of A. Hall, was read. Upon motion of Dr. Bowman, the society instructed the secretary to determine the amount of rent due and pay the same by a regularly drawn order on the treasurer.

The resignation of Dr. L. A. Flexer of Delano was read, and, upon motion of Drs. Lenker and Fleming, was duly accepted.

A communication from the secretary of the Kentucky State Medical Society, with a series of resolutions regulating the subject of life insurance examiners' fees, was read and upon action of the society the secretary was instructed to communicate an endorsement of these resolutions by this society.

The following nominations for offices for the ensuing year were made: President, Dr. J. Lewis Hoffman, Dr. G. H. Moore; vice-president, Dr. A. B. Fleming; secretary, Dr. G. O. O. Santee; treasurer, Dr. David Taggart; censor, Dr. J. Spencer Callen; reporter, Dr. G. O. O. Santee.

A paper on the subject of "Infant Feeding" was read by Dr. G. O. O. Santee and was thoroughly discussed by the members present.

Upon motion of Dr. Bowman the secretary was instructed to forward a copy of the paper for publication in the JOURNAL.

Dr. J. Lewis Hoffman presented the following amendment to the Constitution of the Schuylkill County Medical Society to be known as Section I., Article IX. (the present section then to be known as Section 2, Article IX.); viz. "The officers of this society shall be nominated at the next meeting preceding the annual meeting in January, provided, however, that nomination of officers may be made at the annual meeting in January by regular and formal resolution."

Dr. A. F. Bronson presented the following for amendment to the constitution to be known as Section 3, Article IX.; viz. "One member shall be elected to the board of censors of the society annually to serve for a period of five years."

Upon invitation of Dr. J. Lewis Hoffman, the retiring president, the society decided to convene at his residence in Ashland for the annual meeting and banquet.

G. O. O. SANTEE, Reporter.

SOMERSET—JANUARY.

Pursuant to a call by the vice-president, the Somerset County Medical Society held a special meeting in the office of Dr. Bruce Lichty at Meyersdale on January 3, to take action on the resignation of the president, Dr. E. Hunter Perry, who has removed to New Castle.

Although the society loses a very enthusiastic officer, the resignation was accepted. The vice-president, Dr. Charles P. Large of Meyersdale, was elected to fill the vacancy. Dr. Richard T. Pollock of Garrett was elected vice-president.

H. C. McKinley, Reporter.

UNION—December.

The Union County Medical Society met in Lewisburg, December 20, 1906. The meeting was called to order by President Thornton. A paper on "Sanity and Insanity" was read by Dr. Detwiler of Williamsport. He spoke of the milder types of mental disturbance. The paper was interesting and created some discussion. Dr. Dale of Lemont read a paper on the "Preservation of Health." This was an exceptionally fine and carefully prepared paper, and dwelt on the importance of public sanitation and personal hygiene. A vote of thanks was tendered these doctors for their papers, after which all were entertained at dinner at the Baker House.

The following officers were elected for the year 1907: President, Dr. James Kleckner, Mifflinburg; vice-president, Dr. William Leiser, Jr., Lewisburg; secretary and treasurer, Dr. Charles Gundy, Lewisburg; censors, Drs. Charles H. Dimm, Mifflinburg, Thomas C. Thornton, Lewisburg, Amos V. Persing, Allenwood; social committee, Drs. George G. Groff, Lewisburg; Harry M. Wilson, New Berlin, William E. Metzger, Alvira; reporter, Dr. Oliver W. H. Glover, Laurelton.

Dr. William Leiser was appointed to act with the gentlemen from Lycoming County in soliciting state aid for the building of a sanatorium for the treatment and care of the tubercular.

Oliver W. H. Glover, Reporter.

WASHINGTON—January.

The Washington County Medical Society met January 8 with twenty-three members present, which, considering the condition of the roads, was a good turn out. This was the first meeting under the new program of postgraduate work, and it was gratifying to see that every man was prepared and ably did his work. The subject for the day was "Diphtheria," of which Dr. A. E. Thompson gave the "Bacteriology"; Dr. J. M. C. Reynolds, the "Clinical Diagnosis"; Dr. A. L. Runion, "How Antitoxin Is Made"; and Dr. J. F. Donehoo, "How to Prevent and Disinfect After." It was a good symposium on the subject, and elicited considerable discussion.

Coroner W. H. Sipe was present, on invitation, and gave an interesting talk on the "Relationship between the Doctor and the Coroner." The speaker thinks the office should be filled by a doctor; and, that where such is not the case, they should act in harmony, as otherwise justice is often defeated.

The following resolution was unanimously adopted:—

Whereas, The treatment of inebriates, dipsomaniacs and drug habitués has been largely in the hands of shrewd proprietors of various secret cures; and

Whereas, This is largely due to the fact that no proper hospital conducted on ethical lines exists in the state, and nothing short of a special hospital for inebriates, etc., will meet the case and make the present law for the commitment of inebriates for a period not exceeding one year effective and of great value; therefore be it

Resolved, That we respectfully ask our representatives in the House and Senate, now in session, not only to vote for such a measure, but to do all they can to secure its passage, and we ask that every county society in the state use its best endeavor to influence its members to a similar course.

The following resolution was ordered printed on the program for the March meeting so that all may be familiar with it, and at that meeting a vote will be taken.

Whereas, Some of the life insurance companies have notified their medical examiners of a reduction of fees from $5 to $3, and

Whereas, We, as physicians, realizing the responsibility incident to proper examination of the individual, believe such reduction to be unjust, therefore be it

Resolved, That the Washington County Medical Society and the medical profession in sympathy with them assembled, do hereby declare such reduction to be unjust, and respectfully request that no physician legally authorized to practice medicine in the State of Pennsylvania accept such reduction of fee; and, further, that any physician accepting such reduction be guilty of a breach of professional courtesy.

Resolved, That it is the sense of this society that hereafter, in each examination for life insurance in which urine analysis is required, the fee shall be $5.

Resolved, That the several component societies forming the state association be requested to adopt these resolutions.

JOHN B. DONALDSON, Reporter.

WAYNE—DECEMBER.

The regular meeting of the Wayne County Medical Society was held at the office of Dr. H. C. Noble of Waymart on December 20, 1906. Members in attendance were Drs. Brady, Burns, Ely, Noble, Nielsen, Peterson and Searles. After an excellent dinner, which Mrs. Noble had provided for the visiting members, the meeting was called to order at 2:30 P. M. by President Brady.

The minutes of the last meeting were approved, and correspondence read and acted upon.

The board of censors reported favorably on the application of Dr. Alex. M. Cook of South Canaan and he was elected a member of the society.

An osteopath having been illegally registered as a medical practitioner in this county, the secretary was directed to determine what measures were necessary in order to have his name removed from the records and then report on same to the president.

The secretary reminded the members of the present state law requiring reports to the proper authorities of all cases of contagious disease and all births.

The president appointed committees to nominate officers and to prepare a program for the succeeding year.

The following papers assigned for the meeting were then read: "The Importance of the Early Diagnosis of Acute Diseases Demanding Immediate Surgical Interference," by Dr. E. W. Burns; "The Management of Infected Wounds," by Dr. P. B. Peterson.

Dr. F. W. Powell, who was to have read a paper on "Fractures" was unable to be present, and Dr. H. B. Ely's paper on "Diseases of the Heart," continued from last meeting, was substituted. A general discussion followed the reading of the papers.

The society voted its thanks to Dr. and Mrs. Noble for the splendid dinner and the entertainment given them.

It was decided that the May meeting be held in Honesdale and Dr. H. B. Ely was appointed a committee to make the necessary arrangements.

The meeting then adjourned.

LOUIS B. NIELSEN, Reporter.

WESTMORELAND—DECEMBER.

The Westmoreland County Medical Society met in the parlors of the Hill House, Scottdale, on the afternoon of December 18, 1906, with Dr. E. E. McAdoo, president, in the chair. The meeting was not largely attended owing to rough wintry weather.

Dr. O. I. Hess, Scottdale, read a most interesting paper entitled "The Fanatical Adherence to Traditional Thought and Practice by Medical Conservatism." The paper was well received and showed considerable thought by the writer.

The next regular meeting of the society will be held in Greensburg in February.

M. W. Horner, Reporter.

Necrology.

In Memoriam—Edith Cadwallader Crowder, M. D.

(The following memorial note was recorded by the faculty of the Woman's Medical College of Pennsylvania.)

The members of the faculty of the Woman's Medical College of Pennsylvania hereby record their sense of personal sorrow in the death of Dr. Edith Cadwallader Crowder, which occurred at her home in Chicago during the summer recess of the college.

Dr. Crowder's medical career was as brilliant as it was brief. Graduating at the Woman's Medical College of Pennsylvania in the class of 1900, she served during the following year as intern at the Woman's Hospital of Philadelphia. She then became assistant to the Chief Resident in the same institution, retaining this position until the autumn of 1902 when she went abroad to pursue her medical studies in Vienna. While there she was recalled to take the chair of obstetrics in her *alma mater*, and for two years administered the department with exceptional ability. In September, 1905, she resigned from the college and the following October was married to Dr. Thomas Ried Crowder, thereupon removing to Chicago.

During her connection with the medical school in the capacity of a teacher, she discharged her duties with distinction and left the college her debtor. Yet we mourn not so much because of what she *did* as because of what she *was*.

Born of an honorable ancestry, she was herself the soul of honor. Courageous and proud of spirit, she never wasted time nor energy in resenting an injury, and never failed in gracious appreciation of a kindness. Possessed of unusual ability, broad culture, sound judgment, sympathy, tact, and charm, she compelled esteem and won affectionate admiration.

In Memoriam—Thomas H. Mackin, M. D.

(The following memorial note was adopted at the November meeting of the Berks County Medical Society.)

The Berks County Medical Society deeply regrets to record another of its members on its mortality list.

Dr. Thomas H. Mackin died very suddenly on Monday, October 29, 1906. He was never in robust health but suffered much throughout his entire life since early childhood from the pangs of asthma.

Dr. Mackin was born and reared in Wilkes-Barre. He attended the common schools of that place and is a graduate of the Wilkes-Barre High School. In the fall of 1896 he entered the University of Pennsylvania and graduated from the Medical Department of that institution in June, 1900. After completing his medical course he was elected a resident physician to St. Joseph's Hospital, Reading, and served in that capacity for one year. In the summer of 1901 he entered into practice, locating in this city.

He early identified himself with the city and county medical societies, having been elected a member of the latter, April 14, 1903. He soon won the esteem of his fellow members by his willingness and ability to take an active part. He was also a member of the Association for the Prevention and Treatment of Tuberculosis, and was prominently identified with a number of organizations. He also rendered efficient service to the Philadelphia and Reading Railroad as a substitute physician.

The Berks County Medical Society wishes to extend its sympathy to the bereaved family with the assurance that in Dr. Mackin's death it also has sustained a severe loss.

I. H. Hartman.
F. W. Frankhauser.
W. S. Bertolet.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

VOL. X. No. 5. | ATHENS, FEBRUARY, 1907. | SUBSCRIPTION: $2.00 PER YEAR.

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PRESIDENT:
Isaac C. Gable, York.
VICE-PRESIDENTS:
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Second—William B. Ansley, Saltsburg.
Third—Philip R. Koons, Mechanicsburg.
Fourth—Henry M. Neale, Upper Lehigh.
SECRETARY:
Cyrus Lee Stevens, Athens.
ASSISTANT SECRETARY:
Theodore B. Appel, Lancaster.
TREASURER:
George W. Wagoner, Johnstown.

TRUSTEES AND COUNCILORS:

Thomas D. Davis, Chairman, 261 Shady Ave., Pittsburg, Term Expires 1908.
John B. Donaldson, Canonsburg, Term Expires 1909
William S. Ross, Clerk, Altoona, " " 1909
David H. Strickland, Erie, " " 1909
Geo. W. Guthrie, Wilkes-Barre, " " 1908
George D. Nutt, Williamsport, " " 1908
Henry Beates, Jr., Philadelphia, Term Expires 1907
Luther B. Kline, Catawissa, " " 1907
Thomas M. Livingston, Columbia, " " 1907
Isaac C. Gable, York, Ex-officio.
Cyrus Lee Stevens, Athens, "

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Committee on Inebriate Hospital: Theodore Diller, Chairman, Westinghouse Building, Pittsburg
Committee on Religious Newspaper Advertising: Albert P. Francine, Chairman, 1404 Spruce St., Phila

OFFICERS OF SECTIONS:

Medicine—John A. Lichty, Chairman, 4634 5th Ave., Pittsburg. H. Herbert Herbst, Sec'y, Allentown.
Surgery—John H. Gibbon, Chairman, 332 So. 15th St., Philadelphia. Charles P. Stahr, Sec'y, Lancaster.
Specialties—Lewis H. Taylor, 83 South Franklin St., Wilkes-Barre. Robert Milligan, Sec'y, Pittsburg.
Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association: President, William J. Mayo, Rochester, Minnesota; President elect, Joseph D. Bryant, New York; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago.
Next Annual Session, Atlantic City, N. J., June 4-7, 1907.

Address.

ORATION ON LARYNGOLOGY.

BY IRA J. DUNN, A. M., M. D.,
Erie.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In the history of the Pennsylvania society the addresses on laryngology have been few. The first was that of Dr. Sajous[1] of Philadelphia, the second by Dr. J. Walter Park[2] of Harrisburg; the last was by Dr. Kyle[3] of Philadelphia in 1899. It will thus be observed that the subject has not been reviewed before the society within seven years.

Much advancement has been made in this time. There have been no startling discoveries, but there is manifest a general tendency to the more careful conscientious study of diseased conditions, which, it is so pleasant to observe, is continually increasing in the whole field of medicine. The most important historical event of laryngology of recent years is the celebration in London, March 17, 1905, of the fiftieth anniversary of the invention of the laryngoscope by Emanuel Garcia.

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[1] Trans. of the Med. Soc. State of Penna., 1886, Vol. XVIII. p. 95.

[2] Trans. of the Med. Soc. State of Penna., 1893, Vol. XXIV. p. 37.

[3] PENNA. MED. JOUR., 1899-1900, III. p. 57.

Laryngology proper should be limited to diseases of the larynx. It is evident, however, as has been suggested by Dr. Kyle[3], that the subject, as contemplated by the state society, included affections of the nose, pharynx and nasopharynx. I would respectfully suggest that the term be changed to that of rhinolaryngology, to conform to the meaning intended. As so evidently designed, the subject is a very important one, and should surely hold its own in rotation with ophthalmology and otology. The larynx is so often the all important organ in critical illness that its importance is evident and its frequent consideration fully warranted.

The pharynx and nasopharynx are of so much influence in ear disease that they are most fully studied by the otologist. The nasal passages, however, have not even yet received the consideration due them. The necessity of free nasal breathing is perhaps appreciated. In a recent discourse on pneumonia, Dr. Musser pressed the importance of keeping the nasal passages open and clean by appropriate antiseptics. The progress of general disease, and especially comfort, must be promoted by such cleanly comforting hygiene. In chronic conditions, however, not due to general causes, especially with headache and pain about the face, nervous and mental depression, certainly not nearly enough stress is laid upon the study of the nasal passages. Pressure of the middle turbinated bones, even where free breathing obtains, is frequently the main etiological factor. There are a few who allege that all headaches can be cured by glasses, but certainly there are many headaches that can only be relieved by reduction of overgrowth of the middle turbinated bones by stimulating application or by operation. Such relief is of frequent occurrence in the practice of the specialist. I do not believe this has begun to be sufficiently appreciated and utilized by physicians. This is frequently evidenced by the supreme faith in correcting lenses when no general cause is evident.

The advent of adrenalin has within a few years much simplified all operative procedures. No one thing, perhaps, has contributed so much to a more exact surgery in the nose. The control of hemorrhage and the greater freedom in the use of instruments has almost revolutionized this work. It is an easy thing to give spacious room for nasal breathing but the skilled and prudent operator endeavors to do only what is absolutely necessary for free nasal breathing or relief from pressure, eagerly endeavoring to leave the mucous membrane with the least scarring possible, readily risking the necessity of subsequent operation.

The possibility of more exact work has much limited the use of the cautery. Undoubtedly the day of promiscuous cauterization without careful study of general conditions has long since passed. Dr. Holmes[4] in a recent address has said, "Quite rarely, fortunately, and indeed very rarely since the use of the electrocautery in the nose has been almost universally abandoned, we find acute accessory sinus infection with marked eye symptoms following operative interference in the nasal chambers." Dr. Freer[5] in his address this year before the American Section of Rhinology says, "I have found that a single linear cauterization, horizontally along the whole length of the turbinated down to the bone, permanently relieved the nasal obstruction or at least prevented its recurrence for years." He goes on almost apologizing for mentioning the cautery after practically limiting it to this one single use. I suspect in the near future some Ballenger or Freer will be advocating the submucous resection of the turbinated bones.

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[4] *Ohio State Med. Journal*, Feb., 1906.

[5] *Journal A. M. A.*, 1906, Vol. XLVII. p. 161.

The use of paraffin would seem to be rapidly discontinuing. A number of cases have been reported in which the paraffin has settled in loose cellular tissue at some distance from the point of application. This has already done much to discourage its use in improving the contour of the face. Increased deformity has resulted with very great dissatisfaction to the patient and consequent embarrassment to the operator. More serious results are being noted, however, and there are a number of cases reported of sudden monocular blindness. These are of two classes, one where a paraffin embolus has passed through the general circulation lodging in the central artery of the retina, another where thrombosis has occurred in the ophthalmic vein extending to the vena centralis of the retina. Now that it is conceded, "both for the sake of the operator and the patient that the latter should be told of the remote possibility of blindness as a consequence of the operation," the future use of paraffin must be much restricted. Regarding the ultimate disposition of the paraffin, Broeckaert[6] concludes after considerable study that solid paraffin is not absorbed but encysted, following a more or less violent reaction. Leukocytes try to penetrate it. Phagocytosis follows and gradually subsides. Soft paraffin produces greater reaction. Eschwiler[7] concludes his investigation with the usual opinion that in time all the paraffin is absorbed and replaced by connective tissue.

Almost as though striving for further usefulness, paraffin is now suggested for atrophic rhinitis. Some of the same objections will hold here. While no one drug can boast of special favor, treatment of atrophic rhinitis is becoming much more hopeful. Thorough cleansing intelligently followed by the patient under observation of the physician, with stimulating applications of massage and the heavier ointments of lanolin, etc., usually results in marked and permanent improvement. This is sufficiently encouraging that no one is justified in abandoning treatment without lengthy persistent effort. Ozena is being less considered a distinct disease. By freely draining all pus forming cavities, removing all dead and diseased bone, ozena disappears.

It has been established beyond controversy within the time herein contemplated that the anti-diphtheritic serum has given almost complete control of diphtheria, and that within the last few years neglected, and hence very severe cases are further saved by intubation. Tracheotomy is now never indicated by election. Intubation tubes have been retained for some months. Experience is tending to increase the antitoxin administered to ten or fifteen thousand units, and the use of strychnin grows more and more liberal.

The society was favored at its last meeting with a very complete résumé[8] of the most recent methods of the Hajek-Menzel and Killian methods of resection of the septum. These are thoroughly well established operations much improved and simplified by Ballenger and Freer of Chicago. They are of such marked advance as to practically supersede the Adams and Asch methods. So many have contributed to the development of this operation (and this might be said of most operations), that, as Dr. Freer[9] suggests, it is not fair to name the operation after any one man.

More attention is being paid to the accessory sinuses, and there has been much discussion of improved methods of operation. These severe operations must become fewer and fewer as medicine advances and the practitioner continues to become more thoroughly grounded in the principles of medicine. As the advice becomes less and less frequent that a child will outgrow a chronic suppurating ear, so will a discharge from the nose cease to be spoken of as an incurable "catarrh," and adequate drainage will be established in the acute conditions to the very great limitations of all such diseases.

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[6] *Revue Hebdomadaire de Laryngologie*, Aug., 1906.

[7] *Fraenkel's Archiv. fur Lar.*, 1905.

[8] PENNA. MED. JOURNAL, March, 1906, p. 410.

[9] *The Journal A. M. A.*, July, 1906.

Tubercular laryngitis is being more and more considered as a secondary infection. Its frequency would seem to be already much diminished by the more successful treatment of general tuberculosis. Kronenberg[10] considers primary tuberculosis of the larynx so rare that it may be left practically out of account. Laryngo-fissure may be useful for the exposure and treatment of otherwise inaccessible ulcers in suitable subjects. When tracheotomy is required on account of stenosis, the larynx may be opened and cleared. As regards treatment, it is advisable to convert infiltrations into ulcers by surgical interference. They may yield under climatic and general treatment. Tuberculous ulcers in well conditioned patients should be entirely removed, when possible, if on the epiglottis, but rarely elsewhere. He at first used curets and forceps with energy and hopefulness, but has now given them up. He removes granulations, incises abscesses, scarifies edemas, but beyond that confines himself to the mildest remedies, such as the insufflation of iodoform or other powders after thorough cleansing with saline or soda solution. Kronenberg is in favor of trichloracetic acid, but still more of the galvanocautery, especially in ulceration and granulations on the posterior wall of the larynx.

Lohnberg[11] in reviewing laryngeal tuberculosis complicated with pregnancy claims that the predisposition to laryngeal tuberculosis is marked in pregnancy. On account of the very fatal prognosis to mother and child which is accorded the disease by all observers, the author recommends the prevention of marriage of tuberculous people, the prevention of conception after marriage, the prompt diagnosis of laryngeal disturbances during pregnancy, and removal to the most favorable surroundings if tuberculous laryngitis be recognized.

Dr. Foster[12], Denver, considers formaldehyd of all drugs the most efficient topical application. He uses a solution of two and a half per cent. at the office, and the patient at home continues one per cent. as a spray every hour or two.

Recent years have kept pace in the number of drugs proposed for hay fever, very few of which give any promise of permanent usefulness. Formaldehyd although exceedingly painful for a few seconds will evidently most suddenly arrest hyperesthetic rhinitis. Adrenalin (Takamine) and suprarenalin (Abel) are well established as giving relief in a number of cases. Dr. Solis-Cohen[13] recommends tablet triturates made with the least sugar of milk possible in doses of a fortieth to a tenth of a grain. These are best absorbed and most active in the mouth, one twentieth of a grain being sufficiently active to control his own case. Whatever is swallowed becomes inert, and, when unable to get the active principle in a dose of this size, three to five grains of the suprarenal substance dissolved slowly in the mouth as a lozenge is the best substitute. The adrenalin solutions on the market are too bulky, stimulating the excretion of saliva until it has to be ejected or swallowed. Topically, application is best made in nebula or ointments. Such applications should, of course, follow thorough cleansing.

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[10] *Die Behadlung der Kehlkoftuberkulose. Munch. med. Woch.*, 1903, L, p. 642, 693.

[11] *Die Kehlkopfschwindsucht der Schwageren, Munch. med. Woch.*, 1903, S, p. 328.

[12] Trans. American Academy Oto-Laryngological Section, 1905, p. 17.

[13] *Journal A. M. A.*, Vol. XLVII., 1906, p. 265.

Dunbar's[14] serum, pollantin, seems an addition to our armamentarium. Its effects from report are positive in thirty to fifty per cent. of the cases in which it is used. He advises the use of pollentoxin as a diagnostic test of hay fever. Where there is local irritation and the powdered pollantin fails, the failure is due to excessive doses. Mohr[15] from experience with five hundred and one cases concluded with a good deal of certainty that pollentoxin is the etiological factor of the disease and thinks the tendency to the affection is incurable. One third of all cases in the experience of Cohen fail of any marked effect from pollantin or suprarenalin.

In paroxysms of asthma a tenth of a grain of suprarenalin repeated every ten or twenty minutes if necessary is recommended. The old reliable preparations of atropin grow even more into favor. The use of appropriate waters, spare diet, active skin, kidneys, and bowels, are considered more and more important in the palliation of this unmanageable and distressing disease.

No subject of laryngology needs more careful revision than cancer of the larynx. Perhaps such revision is being delayed by the constant hope of active workers that the ultimate cause of cancer will soon be manifest, and there will follow speedily its complete control. A strong plea is being made in behalf of early macroscopical diagnosis. Curiously this is most encouraged at Johns Hopkins Hospital[16] where microscopical diagnosis is considered most proficient. In Halsted's clinic where photographs, drawings, and careful descriptions have been so constantly employed, gross appearance receives most marked attention. There is much to discourage removal of tissue.

Bloodgood has shown that in the majority of cases the tumor is "buried," and the excision for microscopic study requires two operations. When the tumor is malignant, this opens the way for general dissemination. Moreover, the extent can never be judged by intralaryngeal appearance. Wertheim and Sampson show that no relation exists between the size of the primary growth and the presence, absence, or extent of the pelvic lymphatic involvement. Therefore, one can not judge whether metastasis has taken place or not. There has been much discussion regarding rules for operation, many advocating the early removal of certain forms of the growth intralaryngeally, others advocating the complete extirpation of the larynx as soon as diagnosed. The tendency seems to be toward the latter as with all other cancerous growths, still following the dictum of the immortal Gross when he said, "Cut out the very atmosphere of the damned thing."

More extended study must in future classify colds. It must conclusively establish, too, the very great importance of properly cleansing pavements. How often do we note the passing of rainy, snowy, and most disagreeable weather without local trouble in nose or throat. A little wind follows, drying the pavements, wafting the dust and dirt into the air, and depositing it on the mucous membrane of the upper air passages, and "Everybody has a cold." Much better the mud and contaminated earth than these beautiful pavements when they are not kept clean. No city should pave till provision is made for keeping that pavement clean.

It is almost impossible to adequately review even a year's work with so many special journals and addresses from every civilized land, much less that of the time elapsed since any general retroscope has been given in this way.

I would hope, however, in this very imperfect address to instill encouragement into the work of us all to the end that we shall all practice and teach that few cases of headache and very few "catarrhs" are incurable. That some nasal and pharyngeal trouble must continually recur to the discouragement of our art as long as councils pave our streets and take so little care in keeping them adequately clean. And that we shall continually remember that the rhinolaryngeal tract is a part of a general anatomy, physiology, and pathology, and must partake in all general physiological and pathological changes.

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[14] *Ber. klin. Wochft.*, 26, 28, 29, 1905.

[15] *Munch. med. Wochft.*, 1585, 1905.

[16] *Annals of Otology, Rhinology and Laryngology,* March, 1906.

Original Articles.

ELECTRICITY IN THE TREATMENT OF DISEASE.

BY JOHN V. SHOEMAKER, M. D., LL.D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In opening this discussion upon the therapeutic applications of electricity, it is evident, that in the short time permitted by the program, I can not make any adequate presentation of the subject, and I know a systematic review of all the medical uses will not be expected. Current medical literature and the text-books are crowded with reports of an immense number of diseases and morbid conditions in which electricity, in one form or another, has been recognized as serviceable in therapeutics. Perhaps the best use I can make of the time at my command this afternoon will be to devote it to the consideration of a few applications that I have found especially serviceable in my own experience. In concluding, I will make a comment based upon personal observation with regard to the proper field of usefulness of this potent force. In order to obtain the best results in practice, it is important that we shall bear in mind the limitations of electricity in clinical medicine, because, if these are disregarded, we may expect to meet with certain disappointment. Extravagant claims made by too enthusiastic advocates are not only unjust to this valuable therapeutic resource, but they are also unjust to the patients, who are led to expect impossibilities.

I think it will lead to a clearer view of electricity from the medical standpoint if we lay aside for the moment any preconception we have in our minds with regard to its being a mysterious, life-giving force, capable of working miracles upon the human body, and as being at all times constructive, energizing and beneficent in its effects in pathological conditions. This I know is the popular idea, which has been largely founded upon the seductive and boastful advertisements of charlatans, who have found this a fruitful field in which to work on the credulity of the ignorant public. "There is no sacred disease," said Hippocrates, "or all diseases are equally sacred." So we may say with regard to remedies, there is no mysterious remedy, or all remedies are equally mysterious.

Mercury, arsenic, and other potent drugs may, according to circumstances, act as caustic agents and destroy tissues, or they may act as tonics and favor physiologic changes. In the same way, electricity may be used in medicine to destroy tissue, or on the other hand to favorably influence metabolism, depending upon the form in which it is used and the skill with which it is applied.

Let us now briefly consider the forms in which electricity is utilized in medical practice. We observe, in the first place, that it is used both indirectly and directly. Among the indirect applications of electricity are those in which it is employed as a source of heat, light, magnetism, and *x*-rays. As illustrations of the former, I may mention the galvanocautery, the electric light, and the Röntgen apparatus, also the electromagnet. Illustrations of the direct application are the galvanic, the static, and the induced currents, obtained from the ordinary medical coil or from the large commercial dynamo. The latter, however, is much more powerful than is required for medical purposes, but it may be reduced by transformers and controllers, or "stepped down" so that it can be used therapeutically, as well as for heating and lighting the doctor's office.

The first point that I wish to make is that electricity is always the same in itself, but like the other agents I have named, it may be given in different dosage and in different ways, so that entirely different therapeutic results may be obtained. Success in therapeutics, whether in the use of electricity or any other remedial agent, depends, as we know, very largely upon the personal skill and good judgment of the physician who makes use of it. Incidentally, I may observe that this method of regarding the subject will help to explain why certain conditions, such as neuralgia, may be treated successfully either by galvanism, static electricity, or by the Röntgen ray; these apparently different forms of electricity being skillfully employed to produce apparently the same local effects.

Taking a broad view of the subject, we observe that electricity is employed in therapeutics to accomplish certain definite ends. The clinical fact that these objects may in some cases be obtained by several different methods or forms of application, I have already alluded to. It is also true that others apparently, so far as we know, can only be accomplished by special apparatus and by a single method of technic. In fact, particular means are often employed to obtain definite results, because at present they appear to be the best which have yet been devised to fulfill the special conditions.

With regard to the modus medendi, or the physiologic action of the agent, we may observe that electricity may be used to produce the following effects:—

1. To produce local necrosis, or an eschar. Limited applications may not go so far as to cause tissue or cell destruction, and may only produce local vascular changes, or in other words they may act as rubefacients or counter-irritants. Powerful currents, if passed through the body, will, on the contrary, abruptly terminate and abolish all physiologic processes.

2. To disturb the electrical relations of the elements of nerves and muscles. This is shown by muscular contractions, produced when a nerve trunk and a voluntary muscle are brought within the influence of a current of appropriate strength. It is to be observed here that the electricity primarily gives no additional strength to the nerve or muscle, but simply calls into action energy which is already there. However, by its power to call into play the latent energy of the muscle, it causes movements of the muscle, which in turn leads secondarily to increased blood supply and improvement in nutrition. Illustrations of this are very common, as in treating muscular paralysis.

3. To modify metabolism. Its effects in this direction are well illustrated by the Röntgen apparatus. Exposure to the *x*-rays causes local nutritive changes in the skin, the lanulous hairs fall out from the operator's hands, the skin becomes glossy and thin from the atrophy of the glands, chronic ulceration may occur, which in turn may be followed by malignant disease. It has been repeatedly observed that unguarded exposure of the body to the *x*-rays causes degenerative and atrophic changes in the deeper parts, especially in the fundus of the eye, and in the generative organs. In therapeutics, this inhibitory and atrophic action may be skillfully directed against cancerous or other new growths. The latter having less power of resistance than normal tissue, are made to undergo retrograde change and to wither away. This is especially noticeable in epithelioma of the skin, and also in accessible organs such as the rectum and mammary gland.

4. To act as a temporary stimulant to nutritive processes, and especially to the nervous system and the circulatory apparatus. This is illustrated by the good effects upon nutrition produced by the static current and electric bath, in anemia, neurasthenia, atonic dyspepsia, chronic rheumatism, and incipient tuberculosis.

5. To accomplish certain local effects by stimulating physiologic functions. This is shown in the use of electricity to increase the flow of milk from the mammary gland in the nursing woman. I have called attention elsewhere to the use of the rectal electrode in overcoming constipation. The increased function of the ovaries produced by the induced current or by the static spark is very useful in overcoming dysmenorrhea. The systematic application to the scalp causes improved nourishment of hair follicles, and not only prevents baldness, but actually increases the growth and thickness of the hair.

6. To destroy parasites upon the surface of the body. Many infectious diseases of the skin caused by vegetable microörganisms are promptly cured by the *x*-rays. Among these I may mention alopecia circumscripta, tinea favosa and trichophytina, tinea barbæ, trichorrhexis nodosa, impetigo contagiosa, acne pustulosa, pityriasis versicolor, lupus, and erythematosus, and others that will occur to you from the accounts given in the medical journals.

7. To produce electrolysis. By means of needles introduced into the skin and the passage of a suitable galvanic current, decomposition of fluids and solids occurs, and as a result there may be absorption of new growth. This is utilized in treating keloid or hypertrophied tissue of the nose or throat, and in the destruction of pigmented moles, and the removal of superfluous hair. It also has an application in the treatment of stricture of the urethra, by Neumann's method.

8. To produce intense light. The method, introduced by Tinsen, which has been modified by the use of the electric source of illumination, has yielded really remarkable results from its action upon lupus, and on some superficial malignant growths. The electric light bath has been vaunted as a great restorative agent, but its utility is doubtful. In its operation the entire body is exposed to several hundred incandescent lights. In studying its effects it is difficult to separate the effects of the heat of the bulbs (which acts like a Turkish bath) from the effects of the light itself. We know that light is very irritating to the nervous system, and that the intense sunlight of tropical regions makes these unfit for a permanent residence for white races, as shown by Major Charles E. Woodruff of the United States Army in his recent work on the "Effects of Tropical Light on White Men." At all events, the electric light bath does not act like the electric bath, but simply as a light and heat bath.

9. To produce a high degree of heat. I need not stop to speak of the uses of the galvanocautery in surgery. It is a complete substitute for the actual cautery, and is superior to it when used as the caustic loop in removing vascular growths on the tonsils, especially in cases of hemophilia.

10. To produce magnetic effects. The electric magnetic coil is used in surgery to extract iron fragments from the eye. It is also utilized in the electric balance for detecting the location of a foreign body such as a bullet embedded in the tissues.

The use of the *x*-ray in photography and in diagnosis, as in the skiascope, does not properly come within the province of the therapeutic applications of electricity.

I have now mentioned quite a number of useful applications of electricity in medicine, and have by no means exhausted the list, but I fear if I pursue the subject further I may exhaust your patience.

The second practical point I wish to

make with regard to electricity, and with which I will close these rather desultory remarks is this, and I regard it as a most important one: electricity, in most cases, is to be regarded as only an adjuvant to other treatment. While giving the special electric application, we should also give appropriate remedies to act upon the glands of excretion and secretion. We should consider the state of the blood and give hematinics to increase the blood corpuscles and hemoglobin, or give antidotes to certain toxins, or eliminants to carry off gouty, rheumatic, or other pathogenic agents, in addition to our prescription of electricity. Massage, exercise in the fresh air, a proper diet, regulation of habits of the individual, all these are accessory agents and should be conjoined with the electrical treatment if we wish to obtain the best results. Such indeed is the intelligent medical use of this agent in the hands of the qualified physician. Without such therapeutic accessories, electricity, like massage, is very restricted in its usefulness, and tends towards charlatanism.

THE HIGH FREQUENCY CURRENT IN PULMONARY TUBERCULOSIS.

BY MARTIN L. BARSHINGER, M. D.,
York.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Considerable evidence has been accumulating in recent years that not a little is being accomplished in the actual treatment of tuberculosis. The concentration of mind upon this subject has yielded such results that we may hope for increasing results hereafter. From the partial successes obtained in rendering the body immune from attack by the injection of antitoxins, many of us are confidently looking forward to the finding of the specific in this disease. But, until it is placed in our hands, we are bound to welcome anything that may prove itself to be of value and which promises still further assistance in the management of the disease.

Having been honored with an invitation to contribute a paper to this symposium on the "High Frequency Currents," it occurred to me that it might be of interest and value to report my experience with them in pulmonary tuberculosis, in which I have four cases to present, dating from August 21, 1905, to the present time, covering a little more than one year since my first patient began treatment.

It is in the very incipiency that we should make a test of this agent, as we would of any other agency in this disease. But, since I have none such to report, I can not help but feel that I could hardly present a better series of four cases in which to show the beneficent effects even in the advanced stages, and I believe you will find the following data of the results obtained worthy of your careful study and analysis.

I will present the data just as it appears on my case book. The notes accompanying the record of pulse and temperature at the time of each treatment are the statements of the patients themselves in reporting their condition at each visit.

Case 1. A woman of thirty years, accompanied by her husband, called at my office on the evening of August 21, 1905, and gave the following history: Cough since May, 1904; night sweats, chills and fever, has had five doctors; the fourth, Dr. Miller, told her in August, 1904, she had a cavity, and gave her six months to live; this frightened her, and she then went to Dr. King, who had her sputum examined and, finding tubercle bacilli, put her on raw eggs and milk, and had her sleep in a room by herself with wide open windows, removing one window entirely. She has almost constant cough and much expectoration; no hemorrhages, but sometimes tastes blood; is very hoarse; has shortness of breath; can not get around any more, has to lie down most of the time; has to sit up nights and husband fans and rubs her. She went back more in last three weeks than any other time, and feels something must be done or she can not hold out much longer. She has no appetite; is constipated; menstruation, scanty, lasting but two days. She has three children, last born two and a half years ago. Pulse, 108; temperature, 100 degrees; weight in health, 114 pounds. She is short in stature; a decided brunette. Family history is negative, excepting an uncle (father's brother) dying of the disease.

This was not the kind of case I was looking for to begin my experience with the current, but, the patient being ready for anything, I made an appointment for her first treatment on the following day.

Result of microscopical examination was confirmed by Drs. H. B. King and William H. Treible.

August 4, 1906, Dr. J. S. Miller kindly favored me with the following notes from his case book:—

August 22, 1904, a woman, age 29; mother of three children, youngest 20 mos. old; complains of being tired and has a cough with purulent expectoration which is scanty. The cough began four months ago. She has night sweats; is becoming thinner and has evidently lost weight; Pupils are dilated; pulse, 96; temperature, 100.5 degrees.

While both patient and husband made the statement in giving the history in August, 1905, and again affirmed it July 20, 1906, in justice to Dr. Miller I would say that, in referring to it, he disclaimed having made any such prognosis, saying he is not in the habit of making such prognosis in any case. He also says that the only reason his record is not more complete must be that he asked for a specimen of sputum but the patient failed to report to him again.

TREATMENTS.

August 22, 1905, 9 A. M.: Pulse, 104; temperature, 99 degrees; says she can breathe easier and feels stimulated since treatment.

August 23, 2 P. M.: Pulse, 104; temperature, 99.6 degrees; very little cough last night, very unusual; soreness in chest relieved; weighed yesterday 100 pounds, a loss of five pounds since weighing several months ago.

August 24, 2 P. M.: Pulse, 102; temperature, 99.4 degrees; can breathe again from the stomach; character of sputum different, not so much like corruption; bowels better, freer; feels stronger; can walk now without getting completely out of breath; the two treatments have done her more good than anything else she has ever tried.

August 25, 2 P. M.: Pulse, 102; temperature, 98.4 degrees; does not feel quite so well to-day (possibly due to drop in temperature); but walked to office, could not one week ago; big appetite this noon, first time to relish food in a long while; more ambition; no chills to-day.

August 26, 2 P. M.: Pulse, 96-98; temperature, 98.4 degrees; no chills; feels about the same as yesterday. 8 P. M.: Pulse, 96; temperature, 98.4 degrees; no treatment, stopped in by request to take temperature.

August 27, 2 P. M.: Pulse, 92; temperature, 99 degrees; feels the same as yesterday.

August 28, 2 P. M.: Pulse, 96; temperature, 99 degrees; slept all night; no cough; can lie on left side, could not before, not on right side yet; weight 101 pounds scant.

August 29, 2 P. M.: Pulse, 99; temperature, 99.2 degrees.

August 30, 2 P. M.: Pulse, 88-90; temperature, 98.4 degrees; voice clearer and stronger last evening than it has been in months, has been hoarse for 8 months at least.

August 31, 2:30 P. M.: Pulse, 110; temperature, 98.6 degrees; late, because she went to pay taxes (the last day) and got very nervous fearing she would have to pay percentage.

September 2, 2 P. M.: Pulse, 92-96; temperature, 99.6 degrees; nervous; gets so each month.

September 4, 6 P. M.: Pulse, 108; temperature, 99.4 degrees; walked to office; time for period, always worse just before.

September 6, 2 P. M.: Pulse, 94; temperature, 99 degrees; complains of being very nervous the past two days; weight, 104 pounds, a gain of three pounds last week.

September 8, 6 P. M.: Pulse, 96; temperature, 99.4 degrees; menstruating, not so nervous.

September 10, 2 P. M.: Pulse, 92, after walking to office; temperature, 99.2 degrees; can now also lie on right side.

September 12, 2 P. M.: Pulse, 112; temperature, 99.4 degrees; did not feel so well yesterday; weight, 104 pounds, no gain last week (possibly due to menstruation).

September 13, 2 P. M.: Pulse, 104; temperature, 99.2 degrees; one hard coughing spell last night; feeling depressed and weak to-day, but walked to office.

September 14, 2 P. M.: Pulse, 96; temperature, 97.8 degrees; feels all right to-day; coughs and expectorates less than one week ago.

September 15, 2 P. M.: Pulse, 110; temperature, 99.2 degrees; last night was the best yet.

September 16, 2 P. M.: Pulse, 92-96; temperature, 98 degrees; weighed 105 pounds strong to-day.

September 25, 2 P. M.: Pulse, 92-96; temperature, 99.6 degrees; not feeling so well yesterday and to-day; thinks she has taken cold; weight 104, lost one pound since last treatment; cough has been worse; (no treatments on account of my being away; seems to have missed her treatments).

September 26, 2 P. M.: Pulse, 102; temperature, 101 degrees; headache, chills and pains throughout body; (has taken cold).

September 27, 2 P. M.: Pulse, 94; temperature, 99.2 degrees; feels much better; walked to office again.

September 28, 2 P. M.: Pulse, 96; temperature, 98.4 degrees; feeling better.

September 29, 2 P. M.: Pulse, 96; temperature, 98.6 degrees.

September 30, 2 P. M.: Pulse, 96; temperature, 98.4 degrees.

October 2, 2 P. M.: Pulse, 102; temperature, 99.6 degrees; period came on; not so nervous this month.

October 4, 9 A. M.: Pulse, 96; temperature, 97.6 degrees; feeling better.

October 6, 9 A. M.: Pulse, 94; temperature, 97 degrees; feeling much better the last two days; pulse 84 after treatment.

October 7, 2 P. M.: Pulse, 84-90; temperature, 97.6 degrees.

October 10, 2 P. M.: Pulse, 88-90; temperature, 98.6 degrees; weight, 105 pounds; she was away on a trip since last treatment, driving 28 miles one way.

October 12, 2 P. M.: Pulse, 96-100; temperature, 95 degrees; considerable cough, and not feeling so well.

October 14, 2:15 P. M.: Pulse, 96; temperature, 98.4 degrees; feels better.

October 16, 2 P. M.: Pulse, 96; temperature, 98.4 degrees; feels better; weight, 108 pounds, gained two and a half pounds.

October 18, 2 P. M.: Pulse, 96; temperature, 99 degrees; less cough this morning than at any other time.

October 20, 2 P. M.: Pulse, 90; temperature, 98 degrees.

October 23, 2 P. M.: Pulse, 96; temperature, 97.8 degrees; feeling fine.

October 25, 2 P. M.: Pulse, 102; temperature, 99.2 degrees; weight, 109 pounds; can not breathe so freely, rainy oppressive day.

October 28, 2:30 P. M.: Pulse, 100; temperature, 100.6 degrees; menstruating; constipated.

October 30, 2:30 P. M.: Pulse, 90-92; temperature, 97 degrees; weight, 108 1-2 pounds, a loss of one half pound, November 1, 2 P. M.: Pulse, 92; temperature, 98.6 degrees; period lasted now four days.

November 4, 2 P. M.: Pulse, 96; temperature, 98.6 degrees; coughing more but expectorating less.

November 6, 2 P. M.: Pulse, 96; temperature, 98.6 degrees; cough better; regained the one half pound lost in weight.

November 8, 2 P. M.: Pulse, 96; temperature, 99.2 degrees; cough better.

November 11, 3 P. M.: Pulse, 96; temperature, 98.6 degrees.

November 13, 2 P. M.: Pulse, 92; temperature, 98.6 degrees; weight, 110 pounds.

November 15, 2 P. M.: Pulse, 90; temperature, 99 degrees.

November 18, 2:30 P. M.: Pulse, 90; temperature, 98.6 degrees.

November 20, 2:30 P. M.: Pulse, 90-92; temperature, 98.6 degrees; weight, 111 pounds.

November 22, 2 P. M.: Pulse, 90-92; temperature, 98.6 degrees.

November 24, 2 P. M.: Pulse, 90; temperature, 98.6 degrees; feeling very well; period came on without any nervousness.

November 27, 2 P. M.: Pulse, 96; temperature, 99.4 degrees; weight, 110 pounds strong; menstrual week

November 29, 2 P. M.: Pulse, 92; temperature, 99 degrees; feeling very well; menstruation normal.

December 2, 2 P. M.: Pulse, 92; temperature, 99 degrees; feeling fine; coughing very little.

December 4, 2 P. M.: Pulse, 96; temperature, 98 degrees; weight, 111 pounds strong.

December 6, 2 P. M.: Pulse, 96; temperature, 98 degrees.

December 9, 2 P. M.: Pulse, 94; temperature, 98.6 degrees; feeling better this week than any other time since taking treatments.

December 11, 2 P. M.: Pulse, 94; temperature, 98 degrees.

December 13, 2 P. M.: Pulse, 96; temperature, 98.6 degrees.

December 18, 2:30 P. M.: Pulse, ——: temperature, ——.

December 21, 2 P. M.: Pulse, ——; temperature, ——.

December 26, 2 P. M.: Pulse, ——; temperature, ——.

December 30, 2 P. M.: Pulse, ——; temperature, ——.

Total number of treatments given, 63, covering a period of about four months.

April 10, 1906: Patient called at my office this evening; first time I have seen her since she received her last treatment, December 30, 1905. Pulse, 80-84; temperature, 98.6 degrees. Weighs 118 pounds, heavier by four pounds than ever before; has gotten along fairly well, and felt a more or less continuous improvement ever since. She expressed a fear that perhaps she did not receive enough treatments, as she felt at times that she should have continued a month longer. I told her that if she did not continue to make improvement she should report at once.

July 20: Upon receipt of chairman's letter requesting a paper, I called at her home. She looks the picture of health; says she never felt better in her life; has big appetite; bowels are regular; sleeps well; feels strong as ever, if anything stronger; normal menstruation, lasting four days; no cough nor expectoration, both having disappeared. I called particularly for specimen of sputum for examination for purposes of this paper. Her voice is clear and strong. She says the only thing to remind her of her illness is a little shortness in her breath on a hot, humid day like this, or damp weather (the temperature of the day was 88 to 93 degrees in the shade according to location, a very trying day on all). 4 P. M.: Pulse, 80; temperature 99 degrees, weight, 125 pounds. First time to see patient since April 10; she says that one year ago she did not expect to be here this summer.

CONDITION OF PATIENT.

August 29, 8 P. M.: After walking to office, pulse, 76; temperature, 98.4 degrees. She has been out of town. Weighed, August 20, 126 pounds.

August 31, 4 P. M.: Pulse, 72; temperature, 98 degrees. First break in the humidity.

September 4, 4 P. M.: Pulse, 70; temperature, 98.6 degrees. Weighed yesterday, 126 1-2 pounds.

Case 2. A young man of nineteen years was referred to me, September 26, 1905, by Dr. W. H. Minnich, Dallastown., Gland on right side of neck became enlarged last fall; removed in March by a Baltimore surgeon. Since that time cough has developed, and the weight reduced from 145 to 119 pounds. He coughs a great deal, especially at night; is very hoarse, requiring much effort to speak; has chills and sweats. It is distressing to see patient struggle for his breath, throwing his head back, and throwing one leg over the other, alternating at frequent intervals. Father died with disease two years ago.

TREATMENTS.

September 26, 1905, 8 P. M.: Pulse, 140; temperature, 102.4 degrees. It was only because of the encouragement received thus far in Case 1 that I ventured to make an appointment for treatment on the following day.

September 27, 1 P. M.: Pulse, ——; temperature, ——; since treatment says he feels 100 per cent. better; much easier on chest; not so nervous.

September 28, 1 P. M.: Pulse, 100; temperature, 99.4 degrees; weight, 119 pounds; felt better in last 24 hours than he has in six weeks; feels better after to-day's treatment than yesterday's.

September 29, 1 P. M.: Pulse, 96; temperature, 98.4 degrees; feels better to-day than yesterday; says he could not live nor could he die; feels so much better and freer on chest; cough, easier and looser.

September 30, 1 P. M.: Pulse, 100; temperature, 100.4 degrees; has had no chills since beginning treatment, but night sweats continue; appetite much better.

October 2, Pulse, 108; temperature, 101.8 degrees; weight, 118 pounds; does not feel so well to-day; bowels move now without taking anything.

October 3, 8 A. M.: Pulse, 90-92; temperature, 97.6 degrees; feels better this morning than any time since beginning treatment; says "cough is wonderful loose."

October 4, 8 A. M.: Pulse, 102; temperature, 95.6 degrees; after treatment: pulse, 86; temperature, 96.4 degrees.

October 5, 7 P. M.: Pulse, 112; temperature, 101 degrees; "feeling real good."

October 6, 8 A. M.: Pulse, 100; temperature, 95.2 degrees.

October 7, 1 P. M.: Pulse, 104; temperature, 99.2 degrees; feeling all right; weight, 119 pounds, regaining the pound lost.

October 9, 1 P. M.: Pulse, 104; temperature, 99.6 degrees.

October 11, 1 P. M.: Pulse, 106; temperature, 99.2 degrees; feeling fine; "I can't express myself how well I feel. I feel strong." No night sweats this week.

October 13, 1 P. M.: Pulse, 108; temperature, 98.2 degrees; weight, 119 3-4 pounds; feeling "first rate."

October 16, 1 P. M.: Pulse, 112; temperature, 99.4 degrees; weight, 120 1-2 pounds.

October 18, 1 P. M.: Pulse, 116; temperature, 99.8 degrees.

October 21, 12 M.: Pulse, 96; temperature, 96.6 degrees; feeling fine; has had some sweats.

October 23, 1 P. M.: Pulse, 108; temperature, 97 degrees; weight, 121 pounds.

October, 25, 12:30 P. M.: Pulse, 100; temperature, 97.6 degrees; no sweats since last treatment.

October 27, 12:30 P. M.: Pulse, 96-100; temperature, 98.6 degrees.

October 30, 12:30 P. M.: Pulse, 105; temperature, 99.2 degrees; weight, 120 1-2 pounds; constipated.

November 1, 12:30 P. M.: Pulse, 104; temperature, 97.6 degrees; feeling fine, bowels better.

November 3, 1 P. M.: Pulse, 104; temperature, 98 degrees; feeling fine; voice improving.

November 6, 1 P. M.: Pulse, 104; temperature, 98 degrees; weight, 123 pounds; feeling fine.

November 8, 1 P. M.: Pulse, 100; temperature, 99.6 degrees.

November 11, 2 P. M.: Pulse, 96-100; temperature, 100 degrees. Was not in yesterday on account of having a cold.

November 13, 12:30 P. M.: Pulse, 96; temperature, 99.6 degrees; weight, 122 1-2 pounds; feeling better.

November 15, 12:30 P. M.: Pulse, 92-96. No sweats any more.

November 17, 1 P. M.: Pulse, 92; pain in left side; relieved.

November 20, 12:30 P. M.: Pulse, 96; weight, 122 pounds.

November 22, 12:30 P. M.: Pulse, 96; temperature, 98.4 degrees; side better.

November 24, 1 P. M.: Pulse, 96; temperature, 98.4 degrees; felt weak to-day.

Total number of treatments, 31, covering a period of about two months.

I was at a loss to understand why this patient should remain away, as he was doing quite as well as Case 1 at the same time with an equal number of treatments.

In about one week or ten days he reported and explained that he had decided to stop the treatments. He feared it would take too long with the treatments, and White Haven Sanatorium was recommended to him as being a very good place, and where it would not cost him anything. He said he was already in correspondence and expected to go there very soon. I afterward learned that he had gone, but did not hear anything of him again until after his death in April, 1906.

When I informed the patient in Case 1 that the young man had abandoned the treatments, both she and her husband made the observation that it appeared to them he was making even better progress than herself with the same number of treatments, and I must say it so appeared to me. This young man was lifted out of a pitiable, helpless condition and was so far advanced before abandoning the treatments that he was able to take his gun, go hunting, and enjoy it.

I am indebted to Dr. Minnich for kindly supplying the following, under date of August 1, 1906:—

Patient died April 6, 1906; father died of tuberculosis, May 26, 1903; brother, two years of age, died of tubercular meningitis; others died of the disease outside of immediate family.

Case 3. November 12, 1905, a woman of twenty-seven years, also referred by Dr. W. H. Minnich, had a hacking cough and was spitting blood one year ago. Since April rapid decline has set in, with loss in weight. strength and appetite; weight in April was 135 pounds; present weight, 104 pounds. She sleeps in chair at night on account of cough and expectoration, in which there is much blood. She has chills, fever and sweats; diarrhea. This patient was even in a worse condition than the patient in Case 2. Her general condition and expression indicating a condition of *in extremis*. An appointment having been made by telephone, she received her first treatment on this visit.

TREATMENTS.

November 12, 1905, 10 A. M.: Pulse, 120; temperature, 101 degrees; weight, 104 pounds, treatment relieved pain in chest; feels freer.

November 13, 8 A. M.: Pulse, 120; so nervous can hardly hold thermometer in mouth.

November 14, 8 A. M.: Pulse, 120; slept on couch last night; easier on chest; no chills.

November 15, 8 A. M.: Pulse, 120; slept better last night than in two months.

November 16, 8 A. M.: Pulse, 120; temperature, 98 degrees; not so well as last night; no sweats.

November 17, 8 A. M.: Pulse, 132; temperature, 99 degrees; bowels, very loose.

November 18, 8:30 A. M.: Pulse, 132; temperature, 99 degrees; resting better but very weak.

November 19, 9 A. M.: Pulse, 120; feels better this morning.

November 20, 8 A. M.: Pulse, 132; temperature, 99.6; felt better yesterday than any other time.

November 21, 8 A. M.: Pulse, 120; yesterday was best day, coughed less.

November 23, 8 A. M.; Pulse, 120; temperature, 100.4 degrees; cough less.

November 25, 8 A. M.: Pulse, 120; temperature, 100.6 degrees.

November 28, 8 A. M.: Pulse, 130.

November 29, 1 P. M.: Pulse, 132; temperature, 102 degrees; feels better to-day than any other time since beginning treatment; can eat again a little.

December 1 P. M.: Pulse, 140.

Total number of treatments, 15. Died December 21, 1905.

The record of this case is even worthy of study to show the effect of the current in a case of such evidently fast-ebbing vitality.

Dr. Minnich supplied the following, August 1, 1906:—

"Patient died December 21, 1905; a sister died January 29, 1905, during her lying-in period, with hemorrhage from the lungs on the sixth day after confinement, after giving birth to a puny, little phthisical baby, herself being apparently healthy; her mother and two sisters died of the disease, and others outside of the immediate family."

Case 4. Dr. Spangler of Kane. On August 9, 1906, he kindly handed me the following brief statement of his case:—

Infection occurred nine years ago. Bacilli were found by Dr. Simon, Baltimore, Md., November, 1897. Developed cavity in middle of right lobe. Removed from York to Kane six years ago, and was actively engaged in professional work until March, 1906, when came to York for high frequency treatment. For six months prior to this time, following an attack of pleuropneumonia, had marked increase in cough, expectoration and dyspnea. with pulse rate 110 in bed, and 140-150 upon slightest exertion. No appetite. Infection extended to both apices. Present condition: Appetite restored; pulse rate 80 to 100; decided diminution in local manifestations.

I will add, briefly, without taking up the space that would be required to give all the data, that Dr. Spangler did not present himself for treatment before June 11. He wanted to see what "rest" would do for him before taking up the treatments, spending eighteen hours in bed daily, with little or no improvement in his condition, as my case book shows a record of his pulse rate at 140 on his first visit. The treatments promptly reduced the pulse rate, so that by June 26 he reported his pulse at 85 in bed; also, that he had a desire for food since the 24th, which was the first time for more than a year, and that he was feeling better than in eighteen months.

Dr. Spangler hopes to be able to make a full report to the profession at some future time on the effects of the current upon himself.

CONDITION OF PATIENT.

September 2: Pulse, 90, in the sitting posture; temperature, normal, at 4 and 7:30 P. M. Temperature has been as high as 101 degrees, and for a considerable time, in the evenings.

APPARATUS.

The apparatus employed in these cases consist of a Van Houten and Ten Broeck static machine, an inducto-resonator, designed for giving the high frequency currents, and a series spark interrupter, designed for the control of the ampèrage. The current is applied by means of a vacuum electrode to the chest.

The apparatus may, or may not, be of some importance, as an opinion is held, by some at least, that the quality of this current differs as generated from the various apparatus, there being no uniform standard of construction among manufacturers.

The apparatus I am using gives a current of enormous pressure, having, it is said, a pressure of upwards of one million voltage. This statement may be startling to those not familiar with the fact that electricity generated from a static machine has a very high voltage, but a very low ampèrage.

It is the Oudin form of current I am employing. That it has a penetrating effect beyond the skin may seemingly be easily demonstrated by the interesting experiment of drawing a spark with your finger from the tongue of the subject being charged, producing a characteristic taste, or a vibratory sensation communicated to the touch of your finger. Moreover, if metallic material is placed in direct contact with the skin, and this grounded with a direct connection, having no intervening pad of felt or other material directly opposite the chest to which the current is being applied, no spark or sensation will be detected from the tongue, or any other part of the body, which fact would tend to show there is a direct passage of the current through the chest. In making these experiments it will be observed that the Oudin current, having greater pressure, gives a longer spark, while the D'Arsonval gives a shorter spark but more of a vibratory effect.

The current seems to penetrate everything, and, so far as I know, it does not seem possible to insulate it; at any rate, I have never been able to do it myself, nor have I seen it done. I have also used the D'Arsonval current, but I do not like it so well.

THE EXTERNAL APPLICATION OF MEDICAMENTS.

I have experimented with the external application of antiseptic medicines in conjunction with the current. Before applying the current I painted upon the chest different medicaments, such as iodin, ichthyol, turpentine, camphor, oil of cinnamon, and various essential oils, europhen, formalin, cinnamic acid, even sulphuric acid, and others too numerous to mention, in many and divers combinations, all with one and the same result. The only advantage I have been able to observe by their use is that any moist application to the skin, water will answer the purpose, helps the skin bear the current better. Applications of ichthyol alone, or in combination, having a heavier body and a soothing effect, seems best adapted to lessen the irritating properties of the current. If counter-irritation of the skin is shown to be a desirable thing, then the application of the current to the dry skin will accomplish the purpose better, a disagreeable procedure, however, to the patient.

But as far as the antiseptic properties of the medicines or gases being driven into the chest by means of the current I have no confidence. I am willing to admit that some benefit may accrue from applications of iodin in some form by reason of the repeated applications made while undergoing treatment, but I do believe this benefit to be no other than derived when applied independently of the current.

Before leaving the question of these medicines I want to add that, in the beginning of the treatments, upon asking the patients if they detected the odor of the medicines in the sputum or stools, they would reply in the affirmative. But this, after a time, disappeared and they could no longer detect it. Dr. Spangler, however, failed to detect it at any time, and I am inclined to think his observation correct. I have no doubt that, because of the clinging and permeating odors of the medicines, the lay patients were being deceived and were simply led to respond in the affirmative upon the suggestion of my question, but, after becoming more familiar with the persistent odors, were no longer deceived.

There is another thing of possible interest under this head. On one occasion, during the application of the current on one of these combinations, ignition took place, bursting into a considerable flame, but a convenient towel promptly smothered it. This occurred in my hands once, although there was frequently smoking or emitting of characteristic fumes.

ACTION OF THE CURRENT.

As to the action of the current itself, from my own observations and experience I am constrained to believe that the current alone bestows this beneficent effect upon the human economy. But that it is germicidal in effect I also do not believe.

Microscopical examinations show, so it is reported, an increase in the bacilli in the beginning of the treatments, when they again return to the number first shown, and thereafter but gradually diminish until they are no longer found in the microscopic field. This certainly goes to show that there is no immediate and direct germicidal effect upon the bacilli. I rather believe that, if the current *per se* has any effect upon the bacilli themselves, it is upon the attenuation theory, causing an exuberant growth and rapid multiplication to a point of overproduction and extreme attenuation, thereby dying from exhaustion by reason of their own activities. This condition may possibly be brought about by the stimulation of a vigorous leukocytosis, which has been suggested to me by my striking experience with the current in palmar abscess and felons; or, perchance, because of the bombardment and interruption of the current in its passage through the tubercular field, it may give off and leave a something—which may be merely an irritating effect, and, while not sufficiently potent to kill outright, has such an inimical effect upon the bacilli that their efforts of self-preservation become at last paralyzed. But these theories I have not yet been able to grasp and make my own, and believe them to be more or less fanciful. I have indulged myself in them simply because it has been made to appear, and an impression has been caused to exist, that both current and the external application of antiseptic medicines have a direct effect upon the bacillus. Such an impression had been conveyed to myself when I began my experience with the current.

I will attempt to make an explanation of what appears to me to take place in the body as a result of the action of the current in this disease. From a study of the data of the foregoing cases I note briefly that the current exercises a favorable influence on the pulse and temperature, equalizing the circulation; relieves the distressing cough and facilitates expectoration, pulmonary drainage; arrests and controls chills and sweats, vasomotor control; stimulates appetite and increases body weight, a tissue stimulant; exerts a favorable action upon the bowels; and last, but not least, promotes a feeling of well-being and the condition of "good general health." Another feature too important to be overlooked is the improvement in the laryngeal involvement.

The wonderfully stimulating, I may call it "boosting," effect and a feeling of well being were noticed from the very first treatment in every case, excepting in Case 3 in which the patient experienced it but slightly, if at all, but she felt decidedly easier and more comfortable, so that she too experienced, in a more or less degree, the feeling of well-being. This stimulating, or boosting, effect was more noticeable in the first weeks, when it was followed by more of a soothing and quiescent effect, the stimulating effect gradually disappearing as the patients were regaining their exhausted vitality and were approaching more nearly to the normal again.

From this review of the data I am of the opinion that the current chiefly and foremostly stimulates, increases and maintains the metabolism of the body, securing a reversal of the progressively lowered metabolism which has taken place and does take place in this disease. This improved metabolism favors and leads again to a condition of what we know and speak of as good general health, which, in turn, awakens and induces the return of those natural powers of resistance so wisely bestowed upon the tissues of the body.

While this improvement in the general condition of the body is taking place, the established function of high potential electricity to combat congested and inflammatory conditions and favor a restoration to the normal is taking place in the chest, by the frequent application at regular intervals of the current over the tubercular field, attacking and breaking down the inflammatory walls behind which the bacilli are lodged and entrenched, thereby removing the obstructions of an impeded circulation. I have had a little help in arriving at this conclusion of the current's local action with an experience in two cases of chronic bronchitis, both of which yielded rather promptly to its salutary effects.

Once the enemy's fortifications are battered, broken down and destroyed, the field is made clear for decisive action, and half the battle is won.

It is now that, with the powerful reinforcements of an improved, vigorous metabolism having meanwhile been marshalled and brought up, with a natural, healthy, phagocytosis in the front line of attack, the enemy is put to rout.

It is in this way that I would explain the securing of the pulmonary field against the further attack of the tubercle bacilli, producing a soil too barren and unfavorable for them any longer to occupy and inhabit, and thus the disease is eventually thrown off, although not, perhaps, until after a long, continuous struggle.

My observations, therefore, have taught me to recognize two important factors in the action of the high frequency current in pulmonary tuberculosis: (1) An improved metabolism of the body; (2) an improved pulmonary circulation.

The most discouraging feature in the care and management of this disease is, that these patients grow weary too soon in the fight that is necessary to be made, for they sooner or later come to feel and realize that they are tied to a chain, as it were, that is slowly but surely dragging them down to their doom. But we must not forget, and there is encouragement in the fact, that the body is naturally endowed with strong powers of resistance, and, if we but use well directed measures in a persistent effort, there are always those in whom we may produce favorable results, even in subjects not always placed under the most favorable conditions.

If, in addition to proper feeding, outdoor life and favorable hygienic surroundings, a larger experience will confirm the favorable effects I have reported, we shall have a powerful ally in the treatment of this disease. And if such results are to be obtained in the advanced stages of the disease the question may well be asked, "What may not be expected in the incipiency of the disease?"

In conclusion I owe it to myself, as well as to the profession, to say that I had no intention of reporting my experience with this current until after a longer period of observation in Case 1, which I look upon as my test case, and with which I would ask you to compare the results obtained in the other cases.

This symposium seemed to suggest and offer a propitious occasion to present the facts as they are, hoping, by so doing, to stimulate an interest in this current, which seems to promise so much, that a larger experience may result, and so the more quickly establish the exact value of this agency.

I have a wish, and "the wish is father to the thought," that our sanatoriums may take up the current, along with the other measures in operation, which would speed a larger investigation and experience, as well as insure the correct interpretation of its value.

If we but cast a comprehensive picture from the experiences of each and every one of us upon the screen of our mind's eye and witness the slow tragedy enacted by this relentless disease, we see a picture that is pathetic in the extreme. We see these patients, laboring under a tremendous nervous tension, being tossed about by the alternating elements of hope and despair,—a scene enough to stimulate the activities of our profession to the end that before long our labors may free suffering humanity from the fetters of this dread disease.

THE HIGH FREQUENCY CURRENTS IN CHRONIC RHEUMATISM AND RHEUMATOID ARTHRITIS.

BY G. E. PFAHLER, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

These two diseases or groups of diseases are by their nature chronic and progressive. Any assistance in the treatment of these obstinate cases offered by any means deserves investigation.

Electricity in some form or other has been used in the treatment of these affections practically since the beginning of its use in medicine. I shall confine my remarks to the use of the high frequency, or high potential currents. By these currents, I mean those in which the rate of oscillations is 1,000,000 per second, and in which the voltage approaches 1,000,000.

To this class belong the Morton wave currents obtained from the static machine, the Tesla currents obtained by means of primary and secondary coils, and the D'Arsonval currents obtained from the solenoid, or the Oudin resonator. The currents which I have used were obtained from an Oudin resonator, attached to a large Ruhmkorff coil.

D'Arsonval (*Ann. d'Electrobiologie,* Vol. I. No. 1.) showed that the high frequency currents were not injurious to the human organism. They are not painful, but produce a sensation of warmth. His experiments indicate, however, that these currents have a great influence on metabolism and cell production. By their action respiratory combustion is intensified; the quantity of oxygen consumed in a unit of time, as well as that of carbonic acid eliminated, is heightened. This augmentation of the process of combustion is also indicated by the increase in the amount of urea excreted, while that of uric acid is diminished. At the same time the body parts with more heat. (Freund—Radiotherapy and High Frequency Currents, p. 106.)

Berlioz (*Compt. rend de l'Academie des Sc.*, March 18, 1895.) tested the urine of 280 patients who were under treatment by autoconduction, examining 761 specimens. He found, first, increased diuresis and better elimination of the excreta; secondly, increased organic combustion; thirdly, the proportion between uric acid and urea approached nearer the normal (1-40). Apostoli observed with his patients increased diuresis and excretion of urea, increase in the percentage of oxyhemoglobin in the blood, better capacity for work, walking, etc. The process of nutrition is both stimulated and regulated.

Tripet (*Acad. d. Sc.*, June 25, 1900) made researches on the influence of high frequency currents on the reducing power of the hemoglobin. He found this power increased in thirty-seven cases of patients suffering from defective metabolism—"rheumatism."

Lacaille (*Bullet. offic. d. l. Sociètiè Fr. d. Electrotherapie*, March, 1900) found in his cases the quantity of urea excreted while the patients were under the influence of the high frequency currents increased from eleven grams to forty-three, and even sixty grams.

We do not know the definite causes of chronic rheumatism and rheumatoid arthritis, but they seem to be due to faulty metabolism. Since the high frequency currents seem to stimulate metabolism both locally and generally, we should theoretically hope for some good results from treatment by this means. As a matter of fact good results have been reported by a number of authors. In this brief paper I shall not attempt to review the literature upon the subject, but will give my personal experience in as few words as possible.

My method of treatment has been as follows: The patient is placed upon a chair or couch composed of wood and therefore a bad electrical conductor, and having no direct electrical connection. The patient is then given an electrode which is held in the hand, while the other wire coming directly from the resonator is attached to a vacuum electrode and this is moved over the affected joints or muscles until a distinct erythema is produced. By this method we get several effects, all of which tend to increase both local and general metabolism. The currents passing through the body give a constitutional effect, usually raising arterial tension and increasing tissue change. Locally we get the effect of the passage of the electricity, the counter-irritation which is produced by the multiple sparks from the glass electrode, this effect being increased in direct proportion with the distance of the electrode from the skin. The interposition of clothing, therefore, will increase the amount of counter-irritation. In addition to these, the violet rays and a slight amount of x-rays may have some effect.

The brief mention of an illustrative case will demonstrate some value in the treatment.

Miss M. H., aged 58, occupation book-keeping, was referred by Dr. Mary Griscom. The patient's mother died of consumption. An aunt had rheumatism during life, and during her last year was unable to move. A brother has had repeated attacks of gout. A sister has been ill with rheumatoid arthritis twelve years. All of her joints have been rigid, swollen, and painful, making her absolutely helpless and bedridden. A few months ago, this sister died.

The patient has previously had several mild attacks of painful joints. About one and a half years ago, her right shoulder became painful and gradually rigid, so that at the beginning of the treatment, November 19, 1904, she could only move her arm about a foot from the side of the body, and this caused severe pain. There were also some pains and rigidity in the left shoulder, the right elbow and the right hand. With this there was considerable redness of the hypothenar eminences. Treatment was at first given three times a week, then twice a week, then once a week. After the first few treatments there was relief of pain, which later disappeared entirely. The joints became more mobile, until at the end of four months she could reach up to her head and pin on her hat. After six months her right shoulder was free in motion in every direction and appeared perfectly well. Since that time she has had occasional pains in the knees and feet, for which she has been treated. A few treatments caused these pains to disappear.

At the beginning of treatment this patient was unable to work. In about one month she returned to work and has lost no time since.

This patient has the worst kind of family history; her occupation was against her; and the nervous strain of caring for an invalid sister suffering from the same disease surely gave the most unfavorable outlook for a spontaneous cure. No constitutional treatment was given. Therefore the results obtained can reasonably be attributed to the high frequency currents.

In chronic rheumatism, there is relief of pain and stiffness, and since these are the chief symptoms, we must recognize these currents as a means of treating this disease.

I believe that massage, or vibromassage and passive motion should be added, because this likewise tends to increase metabolism, improves the circulation of the part, and thereby helps to remove the exudate and restore function.

During the past year, I have been using the *x*-ray in the treatment of rheumatoid arthritis and believe that good results are more prompt and generally more satisfactory. However, it is likely that certain cases will do better by a combination of these methods.

DISCUSSION.

ON PAPERS OF DRS. SHOEMAKER, BARSHINGER AND PFAHLER.

Dr. Jay F. Schamberg, Philadelphia: I had hoped the gentlemen who preceded me on the program would discuss the relation of high frequency currents to general medicine. I shall disclaim any attempt to cover this aspect of the subject and speak only of the relation of high frequency currents and allied therapeutic measures to the treatment of cutaneous diseases. Since the discovery of the *x*-rays by Professor Röntgen, the attention of the medical profession has been more particularly directed to the importance of electrotherapeutics. Before that time the subject was eschewed by physicians generally and there was a suspected tinge of charlatanism in the practice of those who treated diseases solely by electricity. The wonderful effects of the *x*-ray in many diseases have increased the confidence of the profession in the therapuetic value of other forms of electrical energy, and have attracted more scientific and better qualified workers to this field of investigation. There is a larger degree of attention paid at the present time to the effects of various physical agents in the treatment of disease. Light, heat, electricity and the *x*-rays act to a certain extent in a similar manner. After a given dosage of these various agents we notice what we term stimulation, doubtless an increased chemical interchange between the blood and lymph streams and the protoplasm itself. If, however, the application of any of these agents (heat, light, electricity or the *x*-rays) is carried to a degree much beyond this primary stimulation, there develops a series of changes ending in cellular death.

I have had no experience with the use of high frequency currents in the treatment of general disease. In cutaneous diseases high frequency currents have a field of usefulness, but a rather restricted one. Were it not for the wide range of usefulness of the *x*-rays in dermatologic therapeutics, high frequency electricity would doubtless be more generally employed. There is one disease notoriously obstinate under other measures which will very frequently improve under the high frequency currents; namely, the disfiguring affection known as erythematous lupus.

I would like to emphasize the statement in Dr. Shoemaker's paper that no adequate actinic irradiation from incandescent light baths may be expected. The effect of these baths is largely diaphoretic. The source, quality and feebleness of the incandescence and the character of the surrounding glass envelope effectually preclude the emergence of chemical rays therapeutically active.

A fact which we must not overlook in interpreting clinical results in electrotherapy is that we are often misguided by statements of patients. I have often known patients to state in most positive terms that they were improved by this measure or that measure, whereas, as a matter of fact, I knew no change had taken place. We know how patients are influenced by large and formidable looking apparatus; the static machine with its electrical discharge makes a powerful mental impression upon many patients. In dermatology, I feel that static electricity has a rather limited field of usefulness. Röntgen therapy overshadows in importance the use of high potential currents, although various electrotherapeutic measures are valuable in special conditions.

In summing up I should say we do not at the present time definitely know the value of high frequency currents and allied electrical measures. It is probably less than is claimed by electrotherapeutic enthusiasts but greater than many practitioners believe. We must not exaggerate their usefulness; neither must we assert our skepticism. The proper course is to treat carefully, and interpret conservatively, not forgetting that there may be other contributing factors in the cures achieved. We should maintain an open mind and permit the results to be verified or negatived by experimentation and time.

Dr. A. R. Matheny, Pittsburg: I have had only a limited experience with the high frequency current in my office and have found it beneficial in some cases of tubercular adenitis. A very practical question comes up regarding the cost of the current. I have found on examining the electric meter that when turning on the high frequency apparatus, the meter will not register. Several Chicago men have found a like condition. I use street current of 110 volts.

Dr. Lawrence Litchfield, Pittsburg: I would like to say that Dr. Bailey who was to have opened the discussion but unfortunately was detained at home told me he had treated four cases of exophthalmic goiter and several cases of simple goiter by the static spark, all with marked improvement.

Dr. C. C. Miller, Altoona: I have been using electricity extensively in my practice during the past seven years with very satisfactory results. I feel confident we can alleviate suffering, and assist largely in bringing about recoveries by its proper application. I do not, however, regard it as a specific, but as having a wider range and more beneficial action than any drug or drugs with which I am familiar. I have used the high frequency currents to some extent with some success, but on the whole with not as good results as from some of the other forms. The galvanic current, on account of its organic stimulation, has a wide range of usefulness in glandular diseases. It is also used successfully in chronic rheumatism and similar diseases. The faradic current acts principally on the nervous and muscular systems, relieving pain, and is, therefore, very useful in neuralgias of all forms. Static electricity, on account of its sedative action, is also useful in nervous disorders, thereby rendering the employment of neurotic and sedative remedies unnecessary. Opium in some form is the best drug we have in relieving pain, but if continued for some time deranges the digestive organs, which is not true of electricity. I use both drugs and electricity in my practice and have had no reason to discontinue them up to this time.

Dr. Charles K. Mills, Philadelphia: I have nothing to say about the treatment of pulmonary diseases nor much about the treatment of arthritis. I have used electricity in different forms for a number of years. Recently I saw a very striking illustration of the relief of pain, apparently arthrodial, from the use of the *x*-ray, and, of course, I have had a few other indirect experiences of this kind. In the condition known as typhoid spine, that condition in which the patient after typhoid fever or other infectious disease suffers with persistent pain in the spinal column, occasionally there may be immediate relief from the use of the high frequency currents or the *x*-ray. The question arises whether in the case of the *x*-ray it is an electrical or other effect.

Dr. Judson Daland, Philadelphia: Dr. Mills' remarks recall a case of rheumatoid arthritis which seemed to have been improved by the use of the *x*-ray. This condition is so chronic and so unaffected by any known agent that this observation becomes of more value than an ordinary observation would be. I do not mean to say that *x*-ray will usually produce this effect, but I desire to put on record the observation that it has been of benefit.

Dr. Lawrence Litchfield, Pittsburg: I feel that the subject of electrotherapeutics is not regarded quite as favorably as it should be by the general practitioner. It is very apt to be left to specialists and falls a great deal into disrepute on account of the ease with which it lends itself to quackery. In my own office I have had several typical cases of lumbago, every one of which has been benefited by one pretty vigorous treatment with the Oudin resonator. I have seen one case of very severe pain along the intercostal nerves, shoulders, and forearms, probably due to neuritis, very greatly benefited.

Dr. Seneca Egbert, Philadelphia: When the *x*-rays were first brought to our attention in 1895 or '96 the idea was entertained by many that they would be germicidal and that they would be especially favorable in overcoming tuberculosis and other deep-seated diseases. Then investigators said they had no germicidal influence and for a long time little attention was paid to that phase of the matter. Now, there is evidence of another reversal of opinion, all of which should make us cautious as to making too early and positive decisions. When we get into the realm of the high frequency current, we are getting a force very analogous to light, and we should remember that in electricity and light we have two of the most wonderful forces of nature and ones that are least understood, for which reason it seems to me the part of wisdom to study them carefully, not to assume a nihilistic attitude in regard to their therapeutic effects. We must feel that we know very little about light as a curative agent. The same is true regarding these newer forms of electricity. We have new agents here of which no one is able to foretell much. It is accordingly the part of wisdom that we should strive to be as students in our attitude toward these agents.

Dr. Pfahler, closing: I am glad for this discussion and I would like to emphasize the remarks of Drs. Egbert and Schamberg that we should look upon these agents frankly, simply accepting the facts as they are. The men who are able to make accurate observations and will record them accurately are the ones who should look into them. The question raised by Dr. Mills, whether the relief of pain when a patient is exposed to the *x*-ray is due to the high frequency current or the *x*-ray, is an interesting one. So far as I know, there has never been a satisfactory explanation of the relief of pain such as is given by the *x*-ray. All the other effects of the *x*-ray are due to chemical action, which has been proven by a number of methods. For instance, the fact that it has a chemical action is shown in the cell changes that have been studied microscopically. The *x*-ray moves in a straight line, and these changes correspond to the limit of the field of exposure in the dry tissues. If it were due to the electricity the effect would not be confined to the line of the rays, since the high frequency currents do not move in this way. It is definitely proven that these cell changes are due to the *x*-ray itself. A number of other changes such as those studied by Dr. Edsall and some of our foreign observers show that the other effects of the *x*-ray are due to the chemical action of the light. Therefore, we have a right to assume that the relief of pain is due to a chemical action of the ray. The relief of pain is wonderful from both of these agents. If these agents relieve pain we have a right to use them, even though they do no more. I have had two cases of typhoid spine treated with the *x*-ray and the results have been remarkable. One patient who had been suffering for five months was relieved in about five weeks and returned to work. Radiographic examination, before I began treatment, showed an appearance of the bone very similar to that found in rheumatoid arthritis.

INTRANASAL CONDITIONS AS BEARING UPON THE ETIOLOGY OF DISEASES OF THE EAR.

BY G. HUDSON-MAKUEN, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It is now nearly twenty years since Wilhelm Meyer first pointed out the close relationship between nasopharyngeal obstructions and diseases of the ear, and his monograph on the subject was epoch making and exhaustive. It called attention for the first time to the interdependence not only of nasopharyngeal and aural diseases, but also of nasopharyngeal and laryngeal diseases; and it served to make clear the utter uselessness and folly of attempting to cure the great majority of diseases of the ear and larynx without at first taking into consideration the conditions in the nose and pharynx. It did as much as any other one thing to divorce the eye and ear in the common practice of specialists, and to join the nasopharynx with both the ear and the larynx.

Formerly we had eye and ear specialists and laryngologists, but no rhinologists. Now a more fitting and comprehensive title, both from an anatomic and pathologic point of view, would be rhinopharyngologists, because the rhinopharynx not only occupies a position midway between the other four important cavities, the nose, mouth, ear and larynx, but is itself the starting point of many, if not the majority, of the diseases of these cavities.

In the light of recent experience and in these days of preventive medicine, it is to the rhinopharyngologist that we look for the best results, for if we can keep the nasopharynx in good condition and the nasal accessory cavities well drained and ventilated we shall eliminate not only the majority of aural and laryngeal diseases, but also many of the ophthalmic diseases as well.

The purpose of this paper is not to add anything new to the literature of the subject, but to refresh our memories of the things that are old, and to direct attention to a few points of value that have come under my observation bearing upon the relationship between the nose and ear.

That diseases of the ear, especially in their initial stages, are largely dependent upon intranasal conditions, is a fact well known to otologists, but it is not generally recognized by practitioners of medicine. In this connection the following points in the anatomic and physiologic relationship of the ear and nasopharynx can not be too often nor too strongly emphasized. The tubotympanum is a cul-de-sac or sinus, occupying exactly the same relation to the nasal cavity that the sphenoid, ethmoid, maxillary and frontal sinuses occupy, and the lining membrane of the tubotympanum is merely a continuation of that which lines the nasal and accessory cavities. Moreover, the physiologic relationship of the middle ear to the nasal cavity is also similar to that of the other sinuses. It has its drainage through the nasopharynx and it is aërated by means of nasopharyngeal respiration. There is a slight excursion of the drum membrane during each respiration, the motion being inward during inspiration and outward during expiration.

The conditions in the nasal cavities giving rise to acute diseases of the ear are, first, those causing disturbances of nasal respiration, second, those attended by suppurative intranasal and sinus inflammation, and third, any condition which by pressure or otherwise may give rise to reflex disturbances. The first class includes hypertrophic and atrophic rhinitis, intranasal growths, septal deflections and spurs, and nasopharyngeal hypertrophies and tumors; and the damage to the ear is chiefly mechanical in its origin. The second class includes all catarrhal conditions of the nasal and accessory cavities; and the damage to the ear is usually by continuity of structure. The third class includes those conditions which give rise to irritation of the terminal nerves in the nasal and accessory cavities and set up ear complications by so-called reflex action.

The tubotympanum is especially liable to damage by mechanical forces acting upon its sensitive and flexible membranes. The air pressure within the normal middle ear being about equal to that in the external auditory canal and varying only slightly with each respiratory movement, the integrity of the drum membrane is maintained; but, when for any reason, such as muscular insufficiency, deviation of the air current during respiration or inflammatory deposition, the Eustachian tube becomes partially or wholly occluded, the air pressure in the middle ear diminishes, and the result is a retraction of the drum membrane and the beginning of a catarrhal process in the tympanum and mastoid cells. This condition may be so insidious in its onset as to be scarcely noticed by the patient, but to those of a sensitive nature there is generally a feeling a fullness in the side of the head. The Germans call this condition a "locked ear." It is often accompanied by tinnitus and dullness of hearing, and sometimes by pain.

The tubotympanum being practically a prolongation of the nasal cavity, the rationale of the development of ear affections from the nasopharynx by continuity of structure is readily recognized, and calls for no special comment.

We now pass to the third class; namely, that in which intranasal conditions produce ear complications by means of reflex nervous action. This part of the subject is none the less interesting because it is somewhat theoretic and problematic. Reflex nervous affections, however, are established facts. Every otologist, for instance, is familiar with the nasal, pharyngeal and laryngeal irritation arising from the use of a probe in the external auditory canal, and, it being a poor rule that will not work both ways, it is not unreasonable to suppose that irritation or pressure upon the sensory nerves of the nasal and accessory cavities will occasion aural disturbances, such as deafness, vertigo and pain.

An interesting and unusual case has come under my own observation. The patient had a slight deflection of the septum with an exostosis, impinging upon the inferior turbinal bone at the junction of the posterior with the middle third. The symptoms for many years were of little account, barring an occasional attack of rhinitis when there was some conscious obstruction to nasal respiration, but at about thirty years of age there developed slight tubal symptoms. There were brief sensations of fullness in the ear and occasional vertigo. So trivial had been the nasal symptoms that no connection between them and the aural disturbances was at first suspected, but as the trouble continued it was thought best to correct the nasal irregularity. The spur was removed by my friend and colleague, Dr. Walter J. Freeman; the symptoms at once subsided and have not returned. The above is a report of my own individual experience and I can, therefore, vouch for its authenticity.

Severe pain in the ear may also be the result of pathologic conditions in the nasal and accessory cavities. Many illustrations of this fact might be given. At the recent meeting of the British Medical Society, in Toronto, Dr. St. Clair Thompson said that, in several of the many cases reported of aural pain due to sphenoidal disease, the mastoid was suspected and even opened before the real cause of the trouble was determined. This one report, it seems to me, emphasizes in a striking manner the importance of this discussion, and the necessity for its frequent revival on occasions of this sort.

The fact that so many diseases of the ear are of nasal origin, however, must not lead us to overlook those that develop in the ear itself, and the fact that such brilliant results are obtained by treatment directed to the nasal cavities must not lead us to underestimate the value of treatment applied directly to the ear. In other words, the otologist should look beyond the ear in all cases, and the rhinologist should look beyond the nose when aural symptoms present themselves.

In conclusion let me say that this paper is not intended to be exhaustive, but only suggestive, and if it serves to stimulate renewed discussion on this important subject I shall feel fully repaid for my effort.

DISCUSSION.

Dr. Chevalier Jackson, Pittsburg: I have much enjoyed this clear, concise paper of Dr. Makuen's, written in the clearest and best English. He has brought up some points of great value; and the suggestions are sufficient to keep us talking all the morning, if we should go into all the points.

It is often very difficult to decide how much to promise a patient from an intranasal operation. Hundreds of times patients have told me they had had their nose operated on for trouble with their hearing, noises in their ears, etc.; and that the operation had not stopped the noises nor helped their deafness. We often treat the nose for ear trouble, and get no improvement whatever. I have now come to the routine of telling a patient that his nose requires treatment and that the chances are that this will help his ear trouble, but that we can not promise that it will. I say that there is defective drainage, etc., as the case may be, which should be treated.

Adenoids form an exception to this rule. Removal of nasopharyngeal obstruction improves ear conditions in almost every case. While it is an error to promise the patient too much from the operative treatment of his intranasal condition, we occasionally get brilliant results from such treatment.

I have a brother who has had trouble with nasal stenosis for a number of years. I disliked to operate, and other men objected to touching his turbinals which were hypertrophied. He had a sclerosis, and his hearing was exceedingly defective. Finally Dr. Ellen Patterson took out both inferior turbinals. The hearing has improved and the tinnitus has almost disappeared,—a most marvelous result. This, while not a personal experience, is so close to it that I can be sure that suggestion or psychic effect had nothing to do with the result. If we should promise patients such a result, we would be disappointed nine times out of ten.

In a recent case the patient had developed a meningitis without its source being known. There had been severe pain in the head and marked pain over the frontal sinus; but the middle ear was normal. There had been some pus in the nose; but the patient had an acute rhinitis, and it looked like the ending of that. There was nothing pointing to the sphenoidal sinus. Both frontal sinuses were uncovered to the mucous membrane, and found normal. I opened above the sinus through the frontal bone; and found, on the one side, a marked meningitis, but no pus. I explored farther back over the cerebrum, and found the dura normal. I then drove a little instrument into the sphenoidal sinus. and got the pus. Whether this was the origin of the meningitis I do not know, but it cleared up promptly and I am inclined to think it was.

Dr. Howard F. Pyfer, Norristown: I think if we can not improve the hearing by operation on the nose, we can at least promise our patients that the condition will not get worse. Though the indicated operation on the nose may not stop the noises in the head, it will keep the symptoms the same for a long time, with no appreciable increase. This is a boon to the patient, especially if there has been a steady increase of the noises. In many patients the operation may stop the noises and considerably improve the hearing.

The total removal of the turbinate seems to me a little reckless, except in a few rare cases. I find that removal of the anterior end of the middle or the anterior end of the inferior will do a great amount of good. One should keep in mind that it is not always the right side of the nose that is involved with the right ear.

Another thing that ought to be emphasized is the effect of adenoids in producing a running ear. A child will be brought with a running ear that has continued for some time. Drops have been used, boric acid solution, peroxid, and all the usual routine. It is imperative to recommend removal of the adenoids. I have had patients in whom the ear healed up following the operation and began running again later after a cold. A suggestion given me by one of the men at the meeting of the American Medical Association at Boston was that, in such cases, there might have been adhesions or some swelling in the postnasal space. Acting under this suggestion, I have put my finger behind the palate, found such conditions around the fossa of Rosenmuller, and cureted: this was followed by the stopping of the discharge.

Dr. Fremont W. Frankhauser, Reading: It occurs to me that we have forgotten internal medication, which I have found to be very valuable in the hypertrophied conditions that are frequently present in the nose. Besides the cleansing with alkaline solutions, I have found nothing gives as good results as benzoate of sodium. Much of the trouble arising from the use of this preparation will be avoided by insisting upon its being prepared from benzoic acid and not from coal tar. While, chemically speaking, the two are practically the same, there is quite a difference in their physiological effects. This is nowhere more manifest than in hypertrophied conditions of the nose.

Dr. Samuel D. Risley, Philadelphia: To me the discussion has been of great interest. I was especially glad to hear the remarks with reference to prognosis, and to the reflex aural symptoms. For many years, I have given very much such a prognosis as mentioned by Dr. Jackson, telling patients with nasopharyngeal catarrhs, associated with chronic tympanic disease, that, if treatment is neglected, they will surely grow steadily worse; whereas, if suitable treatment is adopted, the progress of the disease will, in all probability, at least be arrested, and the hearing possibly improved. Treatment in any event is advisable. I have seen many examples of reflex aural symptoms which were in some instances very obscure. For example, a woman, who had been under the care of an able surgeon for two years with a purulent otitis media, became discouraged. I found the meatus was extremely tender so that efforts at cleansing were very painful. This struck me as being suggestive; for a suppurative ear is not, as a rule, a very sensitive organ to manage. The moment I carried a probe tipped with cotton into her ears, she cried out with pain. Otherwise, she seemed in good health. I sought for reflexes, and ended by sending her to my dentist, who discovered that the wisdom tooth on the side of the diseased ear had not erupted but was buried in a sac of pus. He removed the tooth, treated the abscess for a few days, and sent her back to me. I then found that I could treat the ear without pain, and a speedy recovery followed.

A man consulted me for relief from a high pitched tinnitus and recurring attacks of vertigo which he associated with the noises in his ears. I found the inferior turbinate swollen and lying firmly in contact with the floor of the nostril, far back, and both surfaces ulcerated. Touching the parts at this point produced an immediate and severe attack of vertigo. The tinnitus and vertigo both entirely disappeared when the pressure in the nostril was relieved.

I regret that Dr. Makuen did not include in his paper a wide group of ocular affections among the maladies that grow out of nasopharyngeal and sinus disease. What I had in mind in arranging this symposium was to bring out the important relation existing between aural, pharyngeal, nasal, and ocular disease. The important relation between anatomical deformities affecting the anterior segment of the skull and disease affecting the eyes and the contiguous sinuses has impressed itself upon me more and more with increasing experience. I presented a paper on this subject with illustrative cases before this society four years ago. In one case, there was loss of one eye from disease of the sphenoidal sinus; the probe could be passed into the sinus, and revealed the presence of pus. The woman had been treated for ear disease in Germany for a long time, and the sinus disease was not discovered. The eye was lost. When one considers the relationship between the orbits and the contiguous sinuses, the very thin partition of bone which intervenes and the anatomical communications by way of blood vessels and lymph channels, it is not remarkable that this should occur. Many times a year, I have seen obscure affections of the eyes disappear at once when the drainage into the nose from the frontal, but especially from the ethmoidal, sinus had been restored by getting rid of a stuffed nostril in the region of the middle turbinate. We can by no means separate ophthalmology from this class of troubles, and this is why I asked you to discuss the matter to-day before this section on specialties. We can no more separate ophthalmology from nasopharyngeal disease and the sinus involvements than we can separate aural disease from them. The association of these two factors is as important, as widespread, and as serious as that of otology in its relation to pharyngeal disease. When we consider their common vascular and nerve distribution, it becomes inevitable that they can not be separated, as I see many times a year in my practice.

Then, too, the lachrymal apparatus is also accessory to the nasal passages as are the frontal sinuses. The very frequent congenital deformities of the anterior segment of the skull, which, after all is said, lie at the base of a large percentage of the diseases of the nasal passages, must constantly enter into any complete study of affections of the special sense organs; for many of the latter would never exist but for the congenital anatomical deformities. This should be considered in selecting operations. If you will send patients to their hatter to have the form of the head taken, you will be surprised at the grotesque forms recorded when compared with the model skull. In fitting spectacle frames to the face it is rare to find a patient in whom there is not a difference between the pupillary centers and the median line on the two sides caused by differences in size of the two sides of the face. If you will consider carefully the faces of your friends, you will find that even many of the best looking persons have a more broadly arched zygoma on one side than on the other. Rarely can we find two orbits exactly counterparts; and the same may be said of the nasal passages and the sinuses in the skull, as shown by any collection of dried preparations. This is often the origin of lachrymal disease; it is also the ultimate cause of many of the affections we have been discussing this morning. We too frequently leave out of consideration this anatomical basis of disease, not only in this connection, but also in many other directions in general medicine and surgery.

Dr. Makuen, closing: It was my understanding that a separate paper would be devoted to the relation between the nasal passages and the ear, and therefore my paper deals only with the ear.

As to the prognosis in aural disease due to intranasal conditions, I should say that we can generally promise relief, and even a cure, by treatment directed to the nose if we see the patient at the very beginning of the trouble.

My own case is a good demonstration of this fact: There was some intranasal pressure for years; and finally there developed a sensation of fullness in the ear, with marked intermittent vertigo. The intranasal pressure was removed, and there has been no trace of vertigo since the operation. All the aural symptoms immediately ceased and have not returned in the interval of fifteen years.

If we get these cases of tinnitus and beginning deafness due to intranasal conditions in their incipiency, we may promise cure, in the great majority of instances, by intranasal intervention; but if the trouble has been of long duration, the ear itself becomes organically deranged, and the prognosis is not so good. The condition is somewhat analogous to that of stammering. Many stammerers have intranasal obstruction and pressure, and the stammering is undoubtedly, in some instances, the result of this intranasal condition; but the removal of it will cure the stammering only when it is about beginning, and before it has become fixed in the nervous system. In other words, the removal of an original and remote cause will not cure an affection that has become deeply rooted in the organ itself. This fact suggests the importance of aural, as well as intranasal, treatment in all cases of long-standing ear affections.

Dr. Risley: I should like to ask whether any of the members of the section have, in later years, heard much of so-called Ménière's disease, which was so much talked about twenty years ago.

Dr. Jackson: In my personal experience, it is an extreme rarity; but the syndrome is seen very frequently. The term should be dropped from medicine, unless it be limited to the apoplectic form. Limiting it nosologically to the apoplectiform trouble, Ménière's disease is exceedingly rare. The reason we heard so much of it at one time is that nearly all forms of aural vertigo were called Ménière's disease.

Dr. Harland: I did not believe that there were such cases until I saw a case with a sudden onset and everything else typical of Ménière's disease. The patient has been under observation for three years, and has not been cured. He is not so sick as he was at first, but all the symptoms continue.

Dr. Makuen: A patient of mine, a very intelligent man whom I have had under observation for a number of years, has recurrent attacks of vertigo. He also has intranasal irritation, polypi, and the "locked ear"; and we have been unable to find out whether his trouble is due to his ear disease or to his recurrent, so-called bilious attacks; but they came together, and the one seems to aggravate the other. I do not know whether the vertigo is due to the ear disease or to the gastric condition.

THE UNREMUNERATIVE DEAD.

Rhondda Inquirer—Don't you feel bad when you lose a patient?

Doctor—Certainly. No man cares to be reminded of the fact that the resources of his income are passing away from him.—Tit-Bits.

A PLEA FOR THE CREATION OF A STATE HOSPITAL FOR INEBRIATES AND DRUG HABITUES.

BY THEODORE DILLER, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In a communication published in the May issue of the PENNSYLVANIA MEDICAL JOURNAL, I pointed out that the Act of April 9, 1903, which provides that inebriates or dipsomaniacs may be committed to "a proper hospital or asylum, "for restraint, care, and treatment" for a period not exceeding one year, largely fails of its beneficent purpose because the "proper hospital or asylum" does not exist within the borders of this state: and at the same time, I tried to indicate the great need of a proper hospital, owned and operated by the state, to which patients could be committed for a definite period, to make the Act of 1903 effective.

With the view of ascertaining the sentiment of the profession on the subject, copies of my communication were, by courtesy of the editor of the JOURNAL, at my suggestion, sent to a number of members of this society with the request for an expression of opinion on the subject. Every single one of the gentlemen who sent replies heartily favored the establishment of such an inebriate hospital. These replies came from Drs. Beates, Chase, Rhein, Tyson, Mills, Hare, and Musser of Philadelphia; Drs. McKennan and Lichty of Pittsburg; and Dr. Green of Easton, men representative of the best in neurology, psychiatry, internal medicine, and general practice in thisstate: and besides these replies, one came from O. D. Willhite, superintendent of the recently established State Hospital for Inebriates, at Knoxville, Iowa, strongly endorsing the idea of a separate state hospital for inebriates, and based upon a practical acquaintance with the subject.

Iowa and Massachusetts provide special hospitals for inebriates and dipsomaniacs. The Iowa Hospital opened its doors for the reception of patients only a few months ago, and was soon filled to its capacity. The Inebriate Hospital at Foxboro, Massachusetts, was recently enlarged so as to admit insane patients, who are treated in separate buildings from those for the inebriates. I am informed that the reason for this enlargement was that the cost of maintenance was rather large because of the small number of inebriates committed to the institution; and that it was hoped, by this enlargement, to reduce the per capita cost of maintenance.

Only last year a special law was passed by the New York legislature, providing for the commitment of inebriates to St. Vincent's Retreat by a process very similar to that employed for insane patients. The individual may be committed for a period not exceeding six months, and must pay for his own keep; no provision is made for indigent patients.

It may be objected that the experiment of a state hospital for inebriates was tried in New York, and abandoned some thirty years ago. This institution was located at Binghamton, and was converted into a state insane asylum. It appears that several reasons contributed to the failure of this institution. the chief of which was the lack of a law in New York at that time which permitted the forcible restraint and detention of patients in this hospital. Governor Robinson, in his message to the New York legislature in 1879, says: "The law does not, and perhaps can not, properly provide for the forcible arrest, detention, and control of inebriates. Consequently there are no patients at the asylum, except such as consent to go there voluntarily. There is no power to restrain them of their liberty, and the institution is nothing more than a hotel for the entertainment of wealthy inebriates. who remain there as long as they think it pleasant and agreeable, and when it ceases so to be, they leave it without anything approaching a permanent removal of their appetite for intoxicating drinks."

One to-day, even without this knowledge, might suppose that such a hospital would be a failure unless clothed with legal authority to forcibly detain patients, whose most prominent characteristic is a weakening of the will power.

To ascertain the present-day sentiment in the state of New York, regarding the subject under discussion, I wrote T. E. McGarr, Esq., secretary of New York State Commission in Lunacy, and to Dr. Wm. Mabon, ex-president of the commission, and now medical director of the State Hospital at Ward's Island, New York City. Certainly, these gentlemen should be well qualified to express an opinion in this matter. Mr. McGarr writes: "I have been connected with the lunacy administration of this state for nearly thirty years, and I have, during every week of that time, seen the necessity for an establishment of this character. I firmly believe that with our present-day knowledge of the subject, we should be able to conduct an institution so efficiently as to reduce the cost of maintenance to a reasonable sum."

Dr. Mabon writes:—

"For a number of years I have been impressed with the great necessity for suitable institutions for the proper care and treatment of cases of inebriety. The inebriate is always a distressing element in the institution (insane asylum). He resists attention, after the immediate effects of alcohol have passed away, and he is unwilling to submit to longer treatment.

"These cases of inebriety should be placed by themselves in a special institution provided with every facility for the scientific treatment of their malady, and the physicians in charge should be those who are trained by experience to closely observe and properly care for both the mental and physical aspects of the disease, and the state should have full supervision and control of it.

"There have been so many attempts recently on the part of proprietors of so-called 'cures' to compel city institutions to adopt their treatment, that the thing has become a reproach to the profession and to the laity.

"It is only by committing cases of inebriety for a definite length of time, and restraining them of their liberty, that they can be placed under the best surroundings and conditions to be cured of their infirmity.

"I hope and trust that the measure you so earnestly advocate will meet with success; that your state society will support you by proper resolutions; and that the next legislature will authorize the creation of a state hospital for inebriates, and appropriate sufficient money to place it upon a sound basis."

So it is seen that New York provided an inebriate hospital but not a law governing commitment and detention of patients, while Pennsylvania has provided a law but not a hospital. Iowa has provided both a law and a hospital, and her law (see PENNSYLVANIA MEDICAL JOURNAL, June, 1906) seems to be a very strong one. It provides for the commitment of patients to an inebriate hospital for a period not exceeding three years; for the parole of patients; for the arrest and return of escaped patients; for punishment by fine and imprisonment of any one who gives alcohol or narcotic drugs to patients while they are in the hospital, and fines for those who knowingly give them to cured patients. In the opinion of Dr. W. G. Osborne, who is at present superintendent of the Inebriate Hospital of Iowa, the law in that state admits of a great deal of improvement. He states that they have experienced a great deal of trouble in the matter of escapes, which he believes are large during the summer months on account of the open season. Because of the Iowa law, these patients went beyond the boundaries of the state, and they have not returned. He writes: "A large percentage of these men who have escaped, are patients who came here and could not, and, furthermore, did not have any desire to be benefited. They were of a degenerate and criminal type, and should not have been committed to the hospital in the first place. It would seem to me that, if we had a clause in our law giving the district judges authority to commit only such persons in whom there was some hope of benefit from treatment, this trouble would be largely eliminated. The communities from which they come simply send them here because they wish to purge themselves of undesirable characters, and not with the hope that the individual may be benefited and restored to society, freed from his alcoholic or narcotic addiction. Such individuals when they are brought to the hospital not only escape at the first opportunity, but, during their short residence here, are disturbing elements and tend to create a spirit of discontent and unrest among our better patients."

The Doctor thinks that one year's commitment is hardly long enough. He writes:—

"Up to the present time we have paroled eighty patients, and have had reports from more than seventy. This is a very good showing, but of course it is a little too early to judge of results. We have had to return seven paroled inmates to the hospital for violation of their parole; four of this number have been returned within the past month, and it is more than likely that four or five more will be returned during the present month, as I have been advised that these men have violated their parole.

"Up to the first of July, 310 patients have been committed to the asylum, and the present number is 130. . . . We could expect to run down during the months of July and August, as practically all of our men were admitted during the months of January and February, thus making it necessary to release a good many during the summer months. Furthermore, the court is not in session, and few are being admitted. Since the first of July, 36 patients have been admitted, and more than twice that number paroled or escaped.

"In conclusion, I call your attention to this matter of escapes, and it would seem to me this will be the most grievous problem that you will have to solve. Better facilities should be provided for preventing escapes, and the punishment for the same should be more severe."

The question then of the inebriate is admittedly a most difficult one. Where shall he go? What shall be done with him? At present the indigent inebriate is committed to jail or the workhouse over and over again. Sometimes he goes to the general hospital or to the insane asylum. The wealthier inebriate goes to the general hospital or to the private sanatorium. Of late years, a great majority, perhaps nearly all, of the well-to-do inebriates have taken one or more of the several proprietary so-called "cures," which have received such a large measure of support from influential philanthropic but undiscriminating laymen. The Pennsylvania law prescribes for the inebriate, "restraint, care, and treatment" in a "proper hospital, or asylum," and the inference to be plainly drawn from the law is that a certain time element is necessary for the treatment of the inebriate if restoration to health is to be reasonably expected. The law, as well as medicine, recognizes inebriety as a disease, and agrees as to the essential elements in its treatment.

Pennsylvania, therefore, needs—urgently needs—and should create a properly equipped hospital for the "restraint, care, and treatment" of inebriates, dipsomaniacs, and victims of the drug habit. Nothing short of this can meet the demands of the situation with our present lights upon the subject. I believe the time is ripe for placing this matter before our legislature; and it would seem to me that no association or body of men within the state could so properly take the initiative as the Medical Society of the State of Pennsylvania. Indeed it may be questioned whether the society shall not have failed in the performance of a portion of its duty if it neglects to take this step. I believe the measure would be largely supported by laymen as well as by members of our profession. It is a reproach to us all, laymen and medical men alike, that, with our present-day knowledge of inebriety and drug addiction, no sane, sober, rational method of dealing with it is to be found in this state, where secret, quick "cures" owned by shrewd proprietors abound. At least let the society do its duty in pointing out to our legislature the one essential means by which inebriety and drug addiction may be treated aright; and then, if that body refuses to act, the responsibility will belong to it, and our society will at least have done its duty.

I would therefore suggest that this subject be referred to the House of Delegates, with the request that a special committee be appointed by the president of our society, charged with the duty of petitioning the legislature to create and operate a hospital for inebriates, and to amend, strengthen, and amplify our present law upon the subject in accordance with the requirements of such an institution.

DISCUSSION.

Dr. John B. Carrell, Hatboro: When I was asked to take part in the discussion of a paper I looked over the list of papers to be presented, and chose the subject Dr. Diller has so ably handled. I have always been interested in the subject of alcoholism, and every man, woman and child is intensely interested in it, for it is the curse of curses cursing humanity. Now, if such is the fact, then it is a very important topic for us to carefully consider and see what can be done to mitigate this great social evil.

Being a general practitioner, I am not so well fitted to discuss this subject as experts on mental and nervous diseases; so I asked the opinions of noted specialists on the following questions:—

1. Can the inebriate be successfully treated in our insane hospitals, or is it desirable that the state provide a separate institution for inebriates?

2. What should constitute a condition for commitment to an inebriate hospital?

3. Who should take action to have inebriates committed?

4. What proportion of cases will be permanently cured?

5. During the last ten years, how many physicians have been treated in your institution for insanity caused by alcoholic indulgence?

6. What are the most fruitful causes for the development of alcoholism?

I have a large number of answers to these questions from our most noted specialists in this and other states, and I regret very much that I have not the time to read them, for they are of great value in forming a correct opinion on the subject under consideration, but it will afford me great pleasure to hand these letters to the committee, if such a committee is appointed, to seriously consider the subject.

The concensus of opinion is that the inebriate and drug habitué can not be successfully treated in our insane hospitals, for he requires different environment and treatment. I will pass the second and third questions and take up the fourth. The opinion of experts and statistics vary widely as to the number permanently cured; from one to ninety per cent., but I think under the very best conditions not over ten per cent. will be permanently cured. Many can be improved and part of their lives be good citizens. If the patient desires to recover, the institution will greatly assist him; if he does not desire to recover, then all the institutions in the land, past, present and future, will avail naught.

The answers to the fifth question prove that all physicians are not temperate men, for our present hospitals have many physicians under treatment for alcoholism and drug addiction.

The most fruitful causes for the development of alcoholism are wrong notions of sociability, an unstable nervous system, heredity and the stress and strain of modern life.

It it impossible to do justice to this subject in the few minutes allowed, but from the valuable information I have received, as well as from what I know personally, I am convinced Dr. Diller is right in his position that state hospitals for alcoholics and drug habitués should be established.

Dr. Lowell M. Gates, Scranton: I most heartily agree with all those who have spoken on this very important subject. As we see everywhere the ruin wrought by intemperance and the number of men incapacitated by its effects, we must also see the need that something be done.

I agree with those who have spoken that the reason one man becomes an inebriate and another does not is a matter of temperament and environment. It is the difference between one man drinking for years and years occasionally, and not becoming an inebriate, and another man becoming one in a short time due to a difference in nervous condition. You see one man take beer regularly, morning, noon and night; he may take it socially with his friends and never become intoxicated; he is not an inebriate; he can leave it off entirely if he wishes to. Here is another man who, if he takes the same course, very shortly becomes a slave to it and is crushed beneath it. This shows the difference in the effect of alcohol on the nervous system. Some men have to be treated to stop drinking; but I believe that for such men there is no positive, permanent cure. You may judge this by the wide variation in the statements of those who profess to cure, when you read that there are three or five or seventy-five or eighty per cent. cured. It seems to me that permanent cures must be very few, especially under the conditions of society to-day. The public is in league with the saloon keeper in making men intemperate. You send a man out of an institution apparently cured, and he can not walk down the street without passing a dozen places open for the purpose of making men intemperate. They will do it if they can. These places have their agents out to entrap that man. They will furnish him liquor for nothing, they will furnish it on Sunday or any other time in order to get that man drinking again. Why? Because he is too profitable a customer to lose. They do not want him on the list of total abstainers. They know very well that by giving that man one or two drinks they will put him right back where he was. There is no universal cure, there are many advertised cures all over the country, many special methods of treatment. There is no cure that will stand the test of a few drinks. *He must be led to use his own will power.*

Another point, I do not believe that one year or two years will do any more good than two or three weeks. You take a man who is a total wreck and in a few days you can take away absolutely that man's desire for drink (in twenty-four to forty-eight hours) and in a few weeks you can put him in normal condition, so that he thinks he will never drink again. But he goes down the street and meets a friend with whom he used to drink, or goes on some business trip, or is invited to some social function, and he has not the moral courage to say "No" to the latter, or to tell the former friend, "I am on the water wagon and intend to stay there." Now whether you treat him three weeks, or six months or six years, he has the same temperament, and put in the environment, if he takes the first taste of alcoholic liquor he will almost invariably go back to the same old habits.

That is the position we have to contend with, and as long as the American public will permit itself to be in partnership with the saloon keeper, so long will we have inebriates.

There is another point I want to make in this discussion,—the attitude of the medical profession. I think in the past the profession has added to the list of inebriates by carelessly prescribing alcohol. Some physicians would say to a man who was run down, "Oh, take a little whisky." Because whisky is recommended sometimes by a physician as a tonic, many people will run to the whisky bottle the first thing whenever they feel badly. They use it because they think it is a tonic. But we know it is a narcotic and motor depressant. When we teach the public the truth regarding its action and warn them of its dangers, we will create a different feeling toward the use of alcohol as a beverage.

Dr. Charles K. Mills, Philadelphia: The subject of the care and treatment of the inebriate is a serious and difficult one. The laws which are sufficient to deal with this matter have not been developed in any state or in any country. It is a question whether we ever can have laws which will be sufficient, but it is a case where half a loaf, or any part of a loaf, is better than no bread at all. In this state, many of the factors regarding the treatment of the insane and the defective have been partially met. The law of 1883, with some moderate modifications, is sufficient for the proper certification and the seclusion of the insane. We have the solution of the problem of the criminal insane in sight. The care of the imbecile, the idiot and the mentally backward have been partially looked after, and will be better with the completion of the new institution in the Schuylkill valley.

We have not done much with regard to the study and care of epileptics, although something has been done in this direction. We are still confronted, not only as a state matter, but also as a matter of private treatment and investigation, with the inebriety problem. Personally, I have come to believe that it would be better to have separate institutions for the inebriate. I am aware that many difficulties surround this matter, some pointed out by Dr. Diller. Some of our efforts may not be successful, or at least not fully so. The first essential is better laws with regard to the seclusion of the inebriate. We have a law of a few years ago which does something, but the law is defective. It is difficult for a physician to commit an inebriate under that law; therefore it needs modification. We should do something definite along the lines brought forward by Dr. Diller. The institution should not be a large one. It should have ample grounds, and the buildings should not be large, but should be erected in a manner so they could be extended.

With regard to the length of time of confinement, there is room for some difference of opinion. I certainly do not agree with the last gentleman who spoke, who seemed to believe you can treat the inebriate with success in a few months, a few weeks, or a few days. The problem is not simply to get rid of the desire to drink; that is only one small part of the entire matter. I do not believe, on the other hand, that the time of commitment should be as long as three years. It would be most difficult to enact a law, if you make the limit so long.

I do not think the blame for the existence of the inebriate belongs entirely to the saloon keeper and to society. Probably both help to make him in particular instances and in particular localities. The hereditary conditions which are present in him and in his family are what make the inebriate.

Dr. Charles W. Burr, Philadelphia: I think we ought all to know a little more specifically what the provisions of the Pennsylvania law are in regard to inebriates, etc. The law reads, "It shall be lawful for any person so habitually addicted to the use of alcoholic drink, absinthe, opium, morphin, chloral, or other intoxicating liquor or drug, as to be a proper subject for restraint, care, and treatment in a hospital or asylum, or for at least two persons being the wife, husband, parent, child, children, or next friend of such person, to apply by petition to the Court of Quarter Sessions or to any magistrate or justice of the peace of the proper county, setting forth the facts, upon oath, and requesting the commitment of such person to a proper hospital or asylum, for restraint, care, and treatment; and such petition shall be accompanied by the affidavit of at least two physicians, based on examination by them of the alleged drunkard, setting forth the condition of such person, and stating that, in their opinion, restraint, care, and treatment in a hospital or asylum would be a benefit to such person. Whereupon the said court magistrate or justice, shall issue a warrant to bring before them on the day certain, the petitioner, both physicians, and the alleged drunkard; and a hearing shall then be held, and if the facts set forth in the petition and affidavits are proved to the satisfaction of the judge, magistrate or justice, it shall be the duty of the court to commit such alleged drunkard to a proper hospital, or asylum, for restraint, care, and treatment, until, upon further hearing the said court, magistrate or justice shall be satisfied that such restraint, care, and treatment are no longer beneficial to the person committed as aforesaid: Provided, That such restraint shall not be continued in any case for a longer period than one year. And provided, That no persons shall be committed under the provisions of this act, or be admitted into any hospital or asylum, until payment has been made or security has been given to the managers of the hospital or asylum, satisfactory to them, to pay the proper charges for the board, care, and treatment of the alleged drunkard, and also to indemnify the said managers from all cost and expense. And provided, That all commitments under this act shall be reviewable by proceedings under writ of habeas corpus, which may be sued out, at any time, by any person restrained hereby or by anyone acting for or on behalf of such person."

The physicians do not send him to an asylum in the way they send an insane man to the asylum; they only recommend to the magistrate or justice of the peace or court of quarter sessions to send him there.

A curious position of the law, and one that it seems to me is manifestly unjust, is that it is helpful only to the well-to-do, whereas the poor, with no means, can not come under the provisions of this law at all, because, before the man or woman can be sent to a hospital or asylum, some friend or relative must give bonds to that asylum to pay the board for the patient; the state of Pennsylvania or the county will not assume any financial responsibility at all; the man or his relatives must pay.

Again, he can be committed for only one year; at the end of that time, to send him back again, you have to go through the process all over again. These are the principal provisos of the law. In my experience (I have sent a few men to the asylum under that law) the law has worked itself out this way: The father, brother, wife, or mother, comes brokenhearted to the doctor and says, "We can not control Jim any more; he must be put away." Then the second physician and myself examine him; he is manifestly incompetent, and we sign an affidavit to that effect and go before a magistrate. The magistrate agrees, of course (they always do), and he is sent to the asylum. And then after about two or three weeks, or a month, the family want him back home again. The father, brother, sister or wife, feels, "We were pretty hard on Jim, he was not such a bad sort of fellow"; and then they go the magistrate and say, "Please let Jim out; he is all right now," and the magistrate, being kindhearted, makes out the discharge. In six cases I have assisted in sending the man to the asylum, and in every one of the six that is just exactly what happened. I think that is the experience of most men who have acted under this law.

Now as to the question concerning whether there need to be separate institutions. I think there is much to be said on both sides. If we are going to have special institutions for the inebriates where there are to be no insane, and if the state of Pennsylvania is going to treat all the inebriates, then it is apparent that we will need not one institution but several; not several but many, because there are more inebriates than there are insane people. If we are going to do it in a small way, only going to have one little institution here and there, it would do no more good than to try to pour a bucket of water on a great fire. If we are going to do it in a small way, we will do no good at all.

As to why the insane asylums should not treat these people, I believe the inebriates can be treated in the insane hospitals. I do not think it hurts insane patients to have the inebriates, and also I do not think it hurts the inebriates to have them in insane asylums. I think one reason inebriates are not properly treated in insane asylums is because in the big state asylums, the physicians have so much routine work to do, and so much work that has nothing to do with the examination of patients, yet it is part of their work, and they have to do it. They have to look after the clothing and the food, and all those things which should not be a part of their work or the work of a medical superintendent of a state hospital. It would be better if they had nothing to do with those things, but would attend more strictly to medical matters.

This question is not a medical nor a social question, but a political one. I am an old enough man to have been brought up with the old idea of the Republic, that the government was not a good thing, but a necessary evil, and that the less we had of it, the better; that it was not the state's duty to be the father of the people, but the servant of the citizen; that it was the duty of the state to look after the welfare of the good citizens, and to let the bad citizens alone. And I am not sure that that idea, which dates from the very early days of the Republic is not a better and more practical one than is the idea that the state should do everything for us, educate, as well as everything else. There is much to be said on that side of the case. Therefore, I think it might possibly be better if more of this were left to private men, rather than the state.

Finally, what is the inebriate; is it the common drunkard; is it the dipsomaniac; is it the silly boy who gets drunk because he has nothing else to do; or is it the inebriate, in a technical, neurological sense? Which one of them is to be sent to the special asylum? If you send all of them, you will have to get a great many institutions for this purpose.

One word as to the chances of cure. The case that can be cured is the type of boy with a fairly good family history, with nothing to make him industrious, who finds it better to sit around the market place, or stand on the corner. If we take that boy and make him want to work and be of some account, that boy you can cure so he will stay cured and become a decent citizen, but the other lad, fifteen, sixteen or seventeen, who goes off by himself to drink, not from sociability, but because he takes to drink as a duck takes to water and because he has a craving in his soul for drink, no form of treatment so far known to man will cure him. With the general inebriate, it is apparent that he is not cured. The condition is present in him at the time of his conception; it is the result of a bad ancestral strain. It is not a thing of accident or chance. It is a condition coming down from his parents as any other kind of an odium. Men are not drunkards because they want to be. They are drunkards because of inheritance. I mean drunkard, of course, in the true sense of the word; that man can not be cured.

Dr. Fremont W. Frankhauser, Reading: There is no town in the state of Pennsylvania, there is no town anywhere, but what is making an effort to rid itself of typhoid fever. The cures of typhoid fever in the hospitals and in private practice are more than the cures made in any sanatorium or in private practice in cases of inebriates. If the cures are so few and so far between as to be one or even less than one per cent., what is the use of the state spending many dollars to found an institution? What is the use of trying to treat these patients; why not take the other side of the matter, and eliminate the causes? Prophylaxis is always better, we are taught, than cures; why is it not here? It has been said by very prominent men that it is heredity; undoubtedly. What is it that causes that heredity, and what causes that nervous degeneration? It has been said that young men will grow up to be drunkards. Why? Simply because of nervous degeneration and the environment which surrounds these people.

I think the better plan is to get rid of this condition. What are we to lose? Our saloon men and the brewers are paying large taxes into the state treasury, by which we found institutions, and they take care of the conditions they are making. Are there any of the inebriates cured? Our prominent men say not. The better plan is to prohibit the conditions which make the man an inebriate. I am personally not so much opposed to individual saloons and hotels; I do not believe inebriety is due to them so much as to the individuals and clubhouses throughout the cities and towns. The fact is that there are more spirituous liquors consumed in these places on Sunday than in the saloons and hotels during the week—men and women, old and young men, single and married men, go there to indulge in their passion. What then can be the result? Mr. President, I leave it to you and the members of the State Medical Society to judge.

Dr. Henry Beates, Jr., Philadelphia: The paper by Dr. Diller demonstrates the fact, which must be recognized, that a most deplorable condition environs the inebriate. Explain it as best we can, the fact that inebriates exist, stands out conspicuously, and that there is not a suitable environment obtainable which the proper treatment for the unfortunate conditions demands. We may theorize about inebriety as we are disposed to do; we may consider it a form of mental disease, a psychopathia, hereditary or acquired, or what impresses me as probably a more approximately correct interpretation, the evidence of an undeveloped or relatively weak will.

Certain it is that to regard an inebriate as a lunatic and to pronounce him insane is unjust, and, from a legal point of view, dangerous. The best proof that such a one is not a lunatic is perhaps supplied by the unwillingness of any one to declare such a one insane and to advise restraint in a lunatic asylum.

From the standpoint, therefore, that inebriety, no matter how explained, exists, Dr. Diller's paper certainly indicates the necessity for intelligently meeting the fact. No asylum or hospital exists where proper treatment is possible. Certainly the state owes to itself protection against the financial losses, and the social and moral penalties it pays because of the inebriate. The state fails in a duty to itself, the public, and the individual, if it does not render practicable the establishment of such environment as will supply proper treatment, if it is to be so called, of this unfortunate type of fellow man.

Is it not apparent that the individual, who is so addicted to any form of narcotic habit as to result in unfitting him for the discharge of his duties of citizenship and of family, is a man who is so controlled by the desire to narcotize himself as to be unfit for association in the everyday environments of life? Permit me to call attention to a definition of that eminent physician and scientist, Professor Horatio C. Wood, formulated to describe character. In this work on "Nervous Diseases" he says, "Character is that established equilibrium that exists between the emotional, the intellectual and the volitional."

What fundamental principle or better

formula could be considered in discussing the subject of inebriety than this? An individual has an impulse to indulge in alcohol, morphin, cocain or what not. His intellect perceives whether or not it is beneficial or injurious, profitable or unprofitable, or, from a moral point of view, good or sinful, but he has not the will to coördinate his mental and physical mechanism in accordance with the concept. That is the condition called inebriety. In other words, an inebriate is the victim of an emotion, and the unfortunate being has not the will power to govern himself accordingly.

What such an individual needs is education in building up self-control. Such an individual, to my mind, needs a school if you please (call it a hospital, if you like, or by whatever name you choose, but it is a school in the specific sense) in which anyone, so lacking in will power as to be unable to control morbid impulses which culminate in inebriety, can be, by law, entered and taught by means yet to be perfected to build up his will power so that, when he will have been so educated, he will be able to place the impulse under his feet instead of being down-trodden by the impulse. To educate and develop the will, and how to do it for this specific ill, is the problem presenting for solution.

I do not know of anything that demands the attention of this important advisory board more than the unfortunate inebriate. It is a self-evident fact, it seems to me, that these inebriates should be under the domination of a law which would enable them to be placed in such an institution as has been briefly outlined, and retained there until a system of what may be called "moral education and will growth" has had ample time (and this can only be determined by the actual practice of such a plan) to restore the lost equilibrium which can be recognized by applying the formula enunciated by Professor Horatio C. Wood. We should see to it that, in as far as it lies within our power, this body, the Medical Society of the State of Pennsylvania, exerts its influence in bringing about this desirable end.

Dr. Diller, closing: Dr. Mills has well said that the defectives of various sorts are provided for, except the epileptics and the inebriates; and the class of defectives for which least provision is made, is the inebriate. I think we are all agreed that the inveterate inebriate is a degenerate, but I would not at all like to undertake the distinction Dr. Burr seeks to draw between the inveterate inebriate and the curable inebriate. There are inebriates, I am quite convinced, who are absolutely incurable by any treatment; but I do not believe any one knows in advance quite which inebriates these are.

We need a better law. If such a hospital as I have advocated here were established, we would need a modification or amplification of our present law. I would not advocate that the law should permit the inebriate to be committed for so long a period as three years. I think the superintendent should have some discretionary power as to paroling; and it may be that under certain restrictions it would be wise to have a provision allowing an inebriate to sign away his own liberty for a certain length of time.

Dr. Burr has stated some of the provisions of the law. The law was printed in the spring number of the Journal, so that members might become acquainted with it. It is desirable, rather than otherwise, it seems to me, that the responsibility of sending the patient to an institution, should devolve upon a magistrate rather than upon the physicians. I believe the responsibility is greater than in certifying a person to be insane.

Dr. Burr states that this law does not help the poor; that it helps the wealthy alone. Of the existing law, that is quite true; there is no provision for an inebriate to be committed who has not people who can provide for him. A little later, Dr. Burr seems to take a reverse position, and says it would be well for these institutions to be private, rather than public, where, of course, no poor could be admitted.

One of the things that appealed to me most in advocating a state hospital for inebriates is the fact that no provision is made for the poor under the present inebriate law. An inebriate hospital should be for the treatment of poor patients as well as for the rich. Those who could afford to pay, should be allowed, or, indeed, made to pay. There should be a provision for the poor, just as there is in the insane hospitals at the present time. I heartily endorse the remarks of Dr. Mills, that, if we can not have a whole loaf, we had better have half a loaf: or, if not half a loaf, a smaller portion of a loaf. We can not provide for all the inebriates in the state. A great many would not go to such an institution; many others would be unsuitable for it.

I would not have the state go out and arrest and dragoon all of the inebriates of the state into this proposed inebriate hospital; far from it, I would have the initiative come from the inebriate himself, or his friends as the present law contemplates; and, in my opinion, wisely contemplates. I did not for a moment think such a hospital would provide for all the inebriates of this state.

For the purpose of the present discussion, I shall not go into the question of prophylaxis or prognoses; but I should like to remark that the physician and state have a duty to relieve and care for persons who can not be cured.

I had prepared, Mr. President, a resolution to be offered in the House of Delegates, providing the chairman shall appoint a committee of nine, to request the legislature to create such a hospital. I think, on further reflection, I will not offer that resolution myself. I had hoped that as a result of the discussion, some gentleman would move that this matter be referred to the House of Delegates for its consideration.

INTERNAL USE OF SALINE SOLUTION IN FEVER.

BY J. MADISON TAYLOR, A.B., M.D.,
Philadelphia.

Saline solution, taken freely by the mouth, in all conditions of fever, provides a means of reinforcing the protective agencies existing in the blood. It forms the equivalent, in great measure, of protective and immunizing sera. In two communications I have endeavored to make my reasons clear and well sustained by facts from physiology, pathology and experience. I beg permission to present these briefly. The arguments and citations, along with some results of experience, are to be found in the originals. (1) *New York Medical Journal*, January 13, 1906. (2) *Journal American Medical Association*, November 10, 1906. Abstracts which have appeared, omit to bring out certain important principles and methods.

In all conditions of fever we need, above all things, to preserve, from the outset, the integrity of the blood, especially to enhance the bactericidal and antitoxic properties. This is done by maintaining the normal alkalinity, which chiefly depends upon the balance of the plasmatic salines, especially the sodium chlorid content. During febrile processes these salts are rapidly lost. The source of supply is wholly external to the organism; there is no intrinsic reserve; hence, unless these salts are supplied in food or specially administered, the tissues must soon suffer saline starvation, and, consequently, impairment of cellular interchanges, of osmosis and diapedesis. This induces a lowering of the vital index, the oxygen carrying power of the plasma. The inherent immunizing powers of the blood, however we may denominate them, have been shown to depend on the maintenance of its alkalinity. The chief agent, shown by experiment, is common salt. In our search for immunizing sera, why should we not aim directly at conserving and simplifying those antibodies which exist in the individual? They may be, indeed, in most cases they are, entirely adequate, provided they are encouraged. The tissues must have enough of water, but, as valuable as water is, it should not be, pushed to excess or harm may result. Morris Manges has shown us that excessive use of water may induce various perils. Kraus tells us that "water once within the body is no longer merely water, but must be considered in relation to the various salts, colloids, etc., with which it comes in contact . . . . every drop must be excreted, directly or indirectly, by the heart." Sajous long ago emphasized the imperative demand of the fever patient for an early and adequate supply of plasmic salines, whereby we are often able to furnish the full equivalent of antitoxic and immunizing sera. We must not wait till the whole organism is overwhelmed by toxins, the nerve centers obtunded, the cells paralyzed, the kidneys and lungs engorged. One might as well wait in a case of diphtheria for the moribund stage before administering antitoxin.

My method is a perfectly simple one, to administer physiologic saline solution (6-1000) freely. I give about six ounces in adults, one to three ounces in children, every three hours, preferably a half hour before food. The taste of this salt is scarcely noticeable, is objected to but rarely. If desired it can readily be "disguised" by fruit juices, jellies, etc. In infants I use this saline solution in all milk modifications and food dilutions.

The very simplicity and cheapness of the measure ought to recommend it.

For a child of ten years I tell the mother or nurse to add three teaspoonfuls of salt to three pints of sterile water and use this up each day. This agent affords a powerful safeguard to the blood, supplementing whatever other measures are employed.

VACCINATION.

(From the Williamsport Sun, January 18, 1907.)

From time to time since the enactment of the present compulsory vaccination law in Pennsylvania we read labored protests against the law by self-constituted defenders of the people. The physician usually regards these effusions as silly bids for popular favor by some overofficious fellow who wishes to "stand in" with the people who imagine the law oppressive, and pays little or no attention to it. But when a law so excellent is actually attacked by a large number of well-meaning people, who threaten to move for its repeal at the present session of the legislature, the question has assumed seriousness, and it is time someone "spoke out in meetin'."

The only convincing arguments that can be used in this dispute are authentic and indisputable statistics as to the use and results of vaccination. Arraignment of the well-meaning antivaccinationist is not argument, nor is it argument for him to make bold statements that have never been nor can ever be sustained by the facts.

It will suffice for the purpose of this article to reply to the four stock arguments of the antivaccinationist. "That vaccination is not effective as a preventive in smallpox." "That vaccination does not reduce the virulence of the attack nor lessen the mortality of the disease." That vaccination endangers the life and health of the child." "That the virus is but foul pus taken from a putrid sore and injected."

As to the first and second, we think that the statistics hereinafter given are a complete and sufficient refutation to all unprejudiced minds.

As to the third, that it endangers the life and health of the child: If the present scientifically procured and preserved virus is used, and the operation performed in the proper manner, and the wound given proper subsequent care, there is absolutely no ill effect. No physician to-day has any business using anything but the proper virus. If this is done and the operation properly performed and bad results ensue, the fault lies either in the subsequent care of the wound or in the subject. If bad results are chargeable to the virus or to the operations, the physician is to blame. The law can not be blamed for any of these reasons.

As to the last, that the virus is but foul pus taken from putrid sores: This is, of course, absurd. The virus is not pus but animal lymph taken from the healthy heifer which has been previously examined. This lymph is scientifically treated and preserved on tips; these are sealed. A tip is to be used on one person only.

Smallpox is very infectious. It attacks nearly all who are unvaccinated if exposed. Some, very few, have a natural immunity and never contract the disease. Not a single decade passed in the seventeenth and eighteenth centuries in Europe that did not see its devastating epidemic of smallpox. In Berlin, 1783-97, one twelfth of all deaths were caused by smallpox. In France there was a mortality of 30,000 annually from smallpox. In Greenland's epidemic of 1734, one third of the entire population died of smallpox. In the epidemic in Iceland 18,000 out of 50,000 died. Werner says: "In nonepidemic years one twelfth of all mortality was due to this dread disease. In epidemic years one half. Of the newborn one third died in their first year of smallpox. Countless numbers who escaped death were maimed by loss of sight. Europe's loss amounted to millions."

Surgeon General Sir William Moore says of India before vaccination was introduced from smallpox, that at least ten per cent. had lost the sight of one or both eyes, or were otherwise maimed. The *British Medical Journal* says that in the last epidemic in Guatemala 25,000 died. It had no vaccine laws. Its population is about half of New England's. Yet not that many deaths from smallpox have occurred in all New England in seventy-five years. He styles Guatemala a "paradise for antivaccinationists."

In India during 1873-4, where no vaccination had been previously employed 500,000 died of smallpox. In 1875-6, 200,000 more. Mingled among the people at the time were 120,000 European troops. Vaccination was vigorously enforced among the troops. There were but two deaths from smallpox in the 120,000.

Statistics of smallpox and vaccination in Boston are more complete than of any other city in the United States. The highest mortality in any one epidemic year before vaccination was employed was in 1721, when it reached 77.5 deaths per each 1,000. The lowest mortality in any one epidemic was in 1778, 6.1 per 1,000. After vaccination, the highest mortality in any one epidemic year from 1811 to 1902, was 2.95 per 1,000, in 1872. The lowest mortality was in the epidemic of 1888, when in over 400,000 people there were but eight cases and one death, .002 per 1,000. The average mortality per 1,000 from 1721 to 1791, before vaccination, was 27. The average mortality per 1,000, after vaccination, from 1811 to 1901, does not reach one tenth of one; one death after vaccination, to 270 before.

The exhaustive report of the Epidemiological Society of London gives among its numerous statistics comparisons of death among the unvaccinated and vaccinated. I quote but a few. The basis is on each million and gives the number of deaths from smallpox. Lower Austria, before vaccination, 2,484; after, 640. Tries, before, 14,043; after, 182. Bohemia, before, 2,174; after, 215. Moravia, before, 5,812; after, 198. Eastern Prussia, before, 3,321; after, 56. Berlin, before, 3,422; after, 76. Sweeden, before, 2,050; after, 158. Copenhagen, before, 3,128; after, 286.

Statistics from the report of different countries and cities at different periods: France, 1816-41, cases, 16,397, deaths per 1,000 of unvaccinated, 16.1; of the vaccinated, 1. Milan, 1830-51, cases, 10,240, unvaccinated, 38.5; vaccinated, 7.1. Bohemia, 1835-55, cases, 15,640, unvaccinated, 29.8. Illinois, cases, 1,931, unvaccinated, 48.6; vaccinated, 6.1. Sheffield, 1887-88, cases, 6,088, unvaccinated, 32.6; vaccinated 4.9.

There is a vast difference between "vaccinated," and "successfully vaccinated." Revaccination is also necessary, as the immunity gradually lessens with time.

Mr. Mason, after an extended investigation into this question, concludes with these significant facts: The percentage of mortality among the unvaccinated is 35. Of those said to be vaccinated but show no cicatrix, 23.51. Those showing one cicatrix, 6.8. Two cicatrices 4.9. Showing three cicatrices, 1.95. Showing four cicatrices, .55. These figures establish two conclusions; that "successful" vaccination is necessary and establishes immunity, and that immunization decreases with time, and requires revaccination.

Germany has the most rigorously enforced vaccination and revaccination laws. This law was enacted in 1874. Since that time there has not been a single death in the Prussian army from smallpox. Her government report for 1896 shows that her entire population has become practically immunized from smallpox; the plague completely crushed out.

We have always had the antivaccinationist in our minds. He is one of those fellows who "sits on the tail end of progress and yells whoa." They gather bogus statistics and publish pamphlets to deceive the people. Among some of them may be mentioned Tebb, Taylor, Young, Willkins and Wallace. Wallace appeared before the Royal Vaccination Commission of London in 1890. He was going to scientifically demolish the vaccination theory. He was compelled to retreat step by step. Finally admitting that his data were irregular and imperfect, he said, "My answer is that I did not take it up as a question of pure science."

Notwithstanding this surrender, he and such men as Crookshanks, Creighton, Tebb, Vogt and Larinsen are still advocating their suicidal theories. They are learned hypocrites who do not believe what they are teaching. They are appealing to the prejudice of the people, because it is both popular as well as profitable to do so.

There have been such moths in all progressive movements. Some large cities have suicide clubs; seriously, they should at once enroll the antivaccinationist. But when a great and humane enactment, the strict observance of which will in time completely crush the horrible plague from our fair state, is being threatened by appeals to the prejudice of the people, it is high time to register a vigorous protest.

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The Pennsylvania Medical Journal.
PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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LYCOMING—William E. Delaney, M. D., Slate Run
McKEAN—James Johnston, M. D., Bradford.
MERCER—Charles I. Walker M. D., Sharon.
MIFFLIN—Walter H. Parcels, M. D., Lewistown.
MONROE—N. C. Miller, M. D., Stroudsburg.
MONTGOMERY—Edgar S. Buyers, M. D., Norristown
MONTOUR—Cameron Shultz, M. D., Danville.
NORTHAMPTON—Samuel S. Apple, M. D., Easton.
NORTHUMBERLAND—H. W. Gass, M. D., Sunbury.
PERRY—L. M. Shumaker, M. D., Elliottshurg.
PHILADELPHIA—R. Max Goepp, M. D., Philadelphia.
POTTER—E. H. Ashcraft, M. D., Coudersport.
SCHUYLKILL—George O.O. Santee, M. D., Schuylkill Haven
SNYDER—A. J. Hermann, M. D., Middleburg.
SOMERSET—H. C. McKinley, M. D., Meyersdale
SUSQUEHANNA—C. C. Halsey, M. D., Montrose.
TIOGA—A. H. Glover, M. D., Knoxville.
UNION—Oliver W. H. Glover, M. D., Laurelton.
VENANGO—E. W. Moore, M. D., Franklin.
WARREN—Mary E. Conant, M. D., Warren.
WASHINGTON—J. B. Donaldson, M. D., Canonsburg.
WAYNE—Louis B. Nielsen, M. D., Honesdale.
WESTMORELAND—Myers W. Horner, M D., Mt. Pleasant.
WYOMING—George M. Kinner, M. D., Mehoopany.
YORK—G. E. Holtzapple, M. D., York.

All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

ATHENS, FEBRUARY, 1907.

Whole-souled devotion to public duty, an incorruptible integrity which no appeal to ambition or vanity could for a moment solicit,—these were attributes of Washington, as well marked as his clearness of mind and strength of purpose.—John Fiske.

MEDICAL LEGISLATION AT HARRISBURG.

A bill amending the medical act of 1893 was introduced in the House by Dr. Bowman and referred to the Committee on Public Health and Sanitation. After the osteopaths and Christian scientists were heard by the committee it was generally conceded that the bill could not pass the House. Our Committee on Public Policy and Legislation, with the help of some physicians from Philadelphia and Harrisburg, drafted a One Board Bill which was introduced by Dr. Bowman and referred to the Committee on Public Health and Sanitation. The new bill is a decided improvement over the present act in all respects. If the physicians of the state are active in urging its passage it may become a law. If it fails to pass either the House or the Senate there is little doubt that the present Legislature will pass a law creating a separate osteopathic board, and legalizing as practitioners all graduates of osteopathic colleges who have been practicing in the state for two years.

Each member is earnestly requested to call the attention of his political friends to this bill, to point out the fairness of the same, and to ask them to write their members of the House and Senate in favor of the bill. Emphasize the fact that the doctors are not trying to protect themselves, but are trying to elevate the standing of those who shall enter the practice of medicine. Call attention to the fact that all are treated alike, and that no society or "school" is given any advantage over the others. It will be noticed that the appointment of the members of the examining board is left wholly with the Governor. At present we know of only four state medical societies; our society, the homeopathic society, the eclectic society, and the osteopathic society. The members of the examining board must be members of one of these four societies and each society must be represented. Any governor can be trusted to fairly represent all the societies. Justice and reason are more likely to be considered by one man intelligent and influential enough to become governor than by two hundred and fifty legislators who have to consider the requests and prejudices of all their constituents. Unfortunately our physicians are not very active in expressing their views to legislators. Each thinks that the work will be done by some one else, but the osteopaths are busy night and day in this work. As an illustration it may be mentioned that only two requests have been made for the blank petitions to be signed in protest referred to in the editorial on page 292, last month. Probably the osteopaths in Pennsylvania sent to Washington two thousand signatures in the same time.

If the physicians of the state showed one tenth part of the interest in medical legislation that the Christian scientists and osteopaths show, it would make the work of the conscientious legislator at Harrisburg much more easy. A member of the House said to the writer: "Yes, I know that your stand is the right one but not a single one of my constituents has said a word to me about your side of the matter while I have been flooded with communications from Christian scientists, osteopaths and anti-vaccinationists. I have promised to represent the people of my district and I must largely judge of the wishes of these people by the petitions and protests that I receive."

S.

PROVISIONS OF THE BOWMAN BILL.

For the information of members and others we quote below some of the essential features of the Bowman Medical Bill now pending before the Legislature:—

There shall be established a Medical Council of Pennsylvania, consisting of the Lieutenant Governor, the Attorney General, the Secretary of Internal Affairs, the Superintendent of Public Instruction, the Commissioner of Health, who shall be ex-officio secretary and treasurer of the Medical Council, and four members of the State Board of Medical Examiners, provided for in Section 6 of this Act, one of which four shall be the president of the State Board of Medical Examiners and no two of which four shall be members of the same State Medical Society or State Medical Association.

The Governor shall appoint the members of said Board of Examiners from the full lists of the legally qualified members of the state medical societies or state medical associations of this Commonwealth, which lists shall on or before the first day of January, one thousand nine hundred and eight, and annually thereafter, be transmitted to the Governor under the seal and signed by the secretary of the society or association so nominating . . . . Each one of the said appointees must be a legally registered physician in good standing and shall have practiced his profession, under the laws of the state for a period of not less than ten years prior to such appointment.

At the first meeting of the board and at each annual meeting in April an organization shall be effected by the election from their own membership of a president and a secretary, who shall also serve as treasurer, and the other three members of the Medical Council.

The Board of Medical Examiners shall not less than one week prior to each examination submit to the Medical Council of Pennsylvania questions for thorough examination in anatomy, physiology, chemistry as applied to medicine, hygiene and preventive medicine, pathology as applied to medicine, symptomatology and diagnosis, surgery, obstetrics, and medical jurisprudence and toxicology. From the lists of questions so submitted the medical members of the council shall select the questions for each examination.

Applicants who shall have received their degree in medicine after the first day of January, one thousand nine hundred and eight, must have pursued the study of medicine for four years, of at least eight months in each year in four different calendar years, the work of each year having been successfully passed in some legally incorporated reputable medical college or colleges prior to the granting of said diploma or foreign license. Provided, that the completion of the regular four years' course and graduation from a reputable literary or scientific college, in which four years' course at least two years were devoted to scientific and biologic work in the college, shall be accepted by the Medical Council of the State of Pennsylvania as an equivalent for the first year in a recognized reputable medical college; provided that the examinations of the first year of the said medical college have been successfully passed, and accepted by the medical college as dealing adequately with chemistry, physics, anatomy, physiology and the biologic sciences. And it is further provided, that reputable practitioners of medicine or surgery, who have been engaged in the practice of their profession for a period of not less than ten years and who are graduates of reputable medical colleges are eligible for examination for licensure under this act.

And it is further provided, that applicants examined and licensed by state boards of medical examiners or state boards of health of other states, on payment of a fee of fifty dollars to the Medical Council, and on filing in the office of the Medical Council a copy of said license certified by the affidavit of the president or secretary of such board, showing also that the standards of acquirements adopted by said Board of Medical Examiners or State Board of Health, is substantially the same as is provided by sections ten, eleven, twelve and thirteen of this act, shall without further examination receive a license conferring on the holder thereof all the rights and privileges provided by sections fourteen and fifteen of this act.

On and after January first Anno Domini one thousand nine hundred and eight the Medical Council shall refuse to grant a license to practice medicine or surgery or any of their branches in this state and is empowered to revoke a license conferring the right to practice medicine, surgery or any of their branches, upon the presentation to said Medical Council of a court record showing the conviction in due course of law of said person for procuring or aiding or abetting in producing a criminal abortion or miscarriage by any means whatsoever. The Medical Council upon such evidence and proof shall cause the name of said convicted licentiate to be removed from the record in the office of any recorder of deeds and in the office of any prothonotary in the state. The Medical Council may refuse, revoke or suspend the right to practice medicine or surgery or any of their branches in this state for any or all of the following reasons, to wit: The conviction of a crime involving moral turpitude, habitual intemperance in the use of ardent spirits or stimulants, narcotics, or any other substance which impairs intellection and judgment to such an extent as to incapacitate for the performance of professional duties. Any person who is a licentiate under this act or who is an applicant for examination for licensure to practice medicine or surgery or any of their branches in this state against whom any of the foregoing charges are preferred for causing the revocation or suspension of license or for causing refusal of the right to be examined for licensure shall be furnished by the Medical Council with a copy of the complaint and shall have a hearing before said Council in person or by attorney and witnesses may be examined by said Council respecting the guilt or innocence of said accused. The suspension of license of any licentiate under this act shall be removed when said narcotic or vicious habit hereinbefore specified shall have been adjudged by the proper authorities to be cured or overcome and said suspended licentiate deemed again capable of practicing his or her profession.

Any person offering services as a practitioner of medicine or surgery or any of their branches, who has not complied with the provisions of this act, shall be guilty of a misdemeanor, and upon conviction thereof in the court of quarter sessions of the county wherein the offense shall have been committed, shall pay a fine of not less than one hundred nor more than five hundred dollars, and undergo imprisonment in the county jail for not less than thirty or more than ninety days for each offense, either or both at the discretion of the court.

No one of the gentlemen assisting in the drafting of the bill would have preferred all the provisions of the bill. However, the bill when complete received the unanimous consent of the committee and the advisory physicians present. These members were on the ground and had heard the discussion before the Committee on Public Health and Sanitation as well as the views of the members of that committee, and were therefore fitted to act in the matter. It is hoped that the profession will lay aside their personal preferences and urge their representatives at Harrisburg to favor the Bowman Bill. S.

TYPHOID FEVER.

The severe epidemic of typhoid fever, which has recently visited Scranton, again forcibly calls our attention to the danger of contamination in our present method of obtaining our water supply, and urgently calls for concerted action by our state legislature and boards of health, to prevent any future repetition of such a calamity. The Department of Health is now carrying on a more systematic and scientific study of the life, history, and habits of this virulent and vigorous germ, as well as some better method of disposing of human excretions than now exists.

It seems strange how little attention is paid to preventive medicine outside of our profession. It is far easier to obtain recognition and means from our officials to investigate the diseases of the vegetable and animal kingdom, than to obtain money to investigate and prevent those diseases which afflict the human race. This, however, may be accounted for by the fact that both vegetables and animals have a recognized money value.

Preventive means should be the watch word of the future if we wish to escape repetition of just what has occurred. What we need is more liberal donations from our state and national treasuries in order that the best talent may be obtained to study the typhoid bacillus; the very best means of its destruction; its relation to the bacillus commune, and other germs of the intestinal tract; and ascertain how they can best be eliminated from our water supply. At the same time our Department of Health should be empowered to systematically and regularly examine all the reservoirs of the state. A bill could be passed to make the cities who own their own water supply, or where owned by private corporations, pay for such examinations.

The water sheds of all mountain streams, when said waters are collected for use in reservoirs, should be owned or systematically patroled by the water company, so that no contamination from either human or animal feces could occur. No houses or camp should be allowed on the premises of these water sheds without the permission of a health office. If these measures were rigidly carried out, such horrors as have recently visited our fair city on the North Branch of the Susquehanna would be a thing of the past. No time should be lost in making a large state appropriation to enable the Department of Health with its well organized sanitary engineering division to push its work all over the 45,000 square miles of territory in this state. G. D. N.

THE INEBRIATE HOSPITAL BILL BEFORE THE LEGISLATURE.

A bill providing for an appropriation for the erection of a state hospital for inebriates, prepared under the direction of the Committee on Inebriate Hospital of the State Medical Society has been introduced in the Senate and House.

The bill appears to be well received at Harrisburg; and it seems likely that it will be passed if the law-makers become convinced that public sentiment demands such an institution. Physicians are accordingly requested to write at once to the legislators from their several districts urging the passage of the bill and to get some influential non-medical men of their acquaintance to do likewise. The support of this bill by the medical profession is of the utmost importance; but at the same time it should not appear that doctors *alone* are interested in its passage.

Probably the success or failure of the measure will depend upon the response which is made to this appeal. So again, finally, write at once and get your friend or neighbor to do likewise. D.

THE PRESIDENT OF THE COUNTY SOCIETY.

The Journal has frequently expressed the view that the secretary, more than any other officer, is responsible for the success or inefficiency of the average county medical society. At the same time this view has always been qualified by the contention that any individual, officer or member, can make a live society if he is willing, while sinking self and all selfish motives, to put the necessary time and energy into the work.

The writer is pleased to note that the presidents of our societies are beginning to assume more of the natural responsibilities of this work. Dr. J. B. Carrell, president of the Bucks County Medical Society, has issued a circular to the members admitting that his "society is more prosperous and useful to-day than ever before," due largely to "the valuable work done by our faithful secretary," Dr. A. F. Myers. Printed at the top of the letter is the "Pledge for the coming year: I will do all in my power to assist in the uplifting of my profession and the upbuilding of my society." He asks for "the hearty and enthusiastic coöperation of every member of the society" and their "aid and suggestions to make this the most effective and helpful society in the state."

It is to be hoped that the presidents of all of the societies will become presidents in fact as well as in name and try to lead the members on to better work. S.

ANOTHER ACTIVE PRESIDENT.

Dr. M. V. Ball, president of the Warren County Medical Society, has addressed the following letter to his members:—

Fellow Members:—

You have honored me with the office of president of your county medical society.

Will you not resolve with me to give a little more of your thought and time to developing the work of this organization?

Will you not try to attend the montaly meetings?

Will you not try to take part in the program?

Will you not report your interesting cases?

Then I would ask of you to make these resolves for yourselves.

Resolve to be charitable to the faults and weaknesses of your colleagues.

If they are guilty of a serious wrong doing or have injured you, be manly, do not stab them in the back but bring the matter before the censors, let the accused be heard in his own defense, and if the fault is one unworthy of a member of a profession like ours, I promise you it will not go unpunished.

Resolve to make no compromises with fraud or charlatanry; refuse to put your approval to anything that smacks of secrecy or deception: do not lend your aid to journals that foster humbug and falsehoods in their advertisements; do not prescribe or encourage the use of preparations of whose ingredients you are ignorant; avoid the use of patented drugs as far as possible.

Resolve to take an active part in the public affairs of your community, thus making your special knowledge of value to your fellow citizens, and your opinion worthy of recognition.

Resolve to keep abreast with the latest results of medical research and discovery by diligent reading, attendance at clinics and medical meetings and aid in the pursuit of knowledge by careful observation and recording of facts in your own experience.

Resolve to make the Warren County Medical Society a power for good in the community, the district and the state.

If the members will receive this communication in the same kindly spirit in which it is written, and will act accordingly, we may expect to see this society still more prosperous and influential. S.

NEW YORK COMMISSION TO INVESTIGATE THE CONDITION OF THE BLIND.

The loss of sight in the case of an individual is of economic importance to the state. The New York State Commission to Investigate the Condition of the Blind has been charged, therefore, by the legislature with the duty of inquiring into the causes of blindness, and of recommending methods by which, as far as possible, unnecessary blindness may be prevented. To that end the commission begs the assistance and advice of the medical profession. The secretary will gratefully receive and acknowledge any reprints, reports, pamphlets, or personal communications bearing on the causes and prevention of blindness.

More especially information is sought on the following points:—

- Congenital Blindness:
    - Its causes, the influence of heredity, consanguinity, etc.
    - The reports of cases of blind parents producing blind children, character of blindness in such cases, etc.
- Ophthalmia Neonatorum:
    - How generally are preventive measures employed?
    - Statistics bearing on the subject.
    - What silver salt and in what strength should be recommended?
- Trachoma and Other Infectious Eye Diseases:
    - Statistics.
    - How may early treatment be secured?
    - Prevalence in schools, orphan asylums, etc.
    - Preventive measures—medical inspection of schools.
- Blindness from Accident, Injuries, Fireworks, Toy-pistols, Etc.:
    - Statistics.
    - Method of protection for eyes of workmen, and others.
    - Prohibition of dangerous explosives at celebrations.
- Toxic Amblyopia:
    - From methyl alcohol—other toxic agents. How may the public be protected?
- Neglect on the Part of Patients Visiting Dispensaries:
    - Patients suffering from conditions threatening vision absent themselves from clinics after being advised of the need of immediate treatment until too late. Method of reaching such.
- Blindness Due to Neglect of Slight Ophthalmic Injuries:
    - How can early treatment be more generally secured?
- Blindness Due to Improper Hygiene and Sanitation in Corneal Troubles of Children:
    - How may early treatment be secured?
- Other Causes of Blindness::
    - Suggestions as to prevention.

The commission will be most grateful for advice and assistance on the above subjects.

F. PARK LEWIS, President,
454 Franklin St., Buffalo.
O. H. BURRITT, Secretary, Batavia.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

At the last meeting of the Mississippi Valley Medical Association it was decided to offer a prize of $100.00 for the best essay on some medical or surgical subject.

The competition is to be limited to those who, at the time of entering the competition as well as at the time of the award, shall be members in good standing of the Mississippi Valley Medical Association.

The award will be made by a committee appointed for the purpose, consisting of Drs. Hugh T. Patrick of Chicago, A. H. Cordier of Kansas City, and Chas. H. Hughes of St. Louis. The name of the author is to be enclosed in a sealed envelope bearing some motto or device and the essay is to be marked by the same motto or device. The name of the successful author and the title of his essay will be announced at the next meeting of the association to be held in Columbus, Ohio, October 8, 9 and 10, 1907, and the award will be made at that time. The successful essayist will be notified at least two weeks prior to the meeting, and he will be expected to read his essay at that meeting. The essay is to be published in the organ of the association.

All essays must be typewritten, and are to be sent to the secretary, Dr. Henry Enos Tuley, 111 W. Kentucky Street, Louisville, Ky., on or before August 1, 1907, after which date no essay will be received.

The committee reserves the right to reject any or all essays.

HENRY ENOS TULEY.

PHYSICIANS AND PHARMACISTS.

The physicians and pharmacists of Monessen have entered into an agreement by which the druggists agree to avoid window displays of proprietary medicines and the advertisement of the same, to discourage counter prescribing and to refer patrons to a physician, and the physicians agree, on the other hand, not to dispense tablets except in a case of emergency and not to prescribe proprietary pharmaceuticals, but to indicate U. S. P. and N. F. preparations wherever possible. S.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES.

The following new names have been reported from January 5 to February 2: J. F. Edwards, William B. McKenna, William A. Wyckoff, Pittsburg; A. S. Schaefer, W. E. Stover, Allegheny; William M. Campbell, Henry B. Barnhart, Patrick T. Sullivan, McKees Rocks; D. E. Walker, McKeesport; O. Charles Campbell, Ford City; Joseph M. Steim, Thomas N. McKee, Kittanning; Rena M. Heilman, Leechburg; William F. Beitsch, Bert C. Painter, New Brighton; D. C. Moore, Monaca; Bruce H. Snodgrass, Beaver Falls; Oswin W. Berkey, Bally; A. F. Marshall Stump, Reading; Edward H. Harris, Butler; Clifford L. Kaucher, Ashtola; James C. Stem, Lemoyne; John K. Hamacher, Mechanicsburg; Harvey B. Bashore, Elmer A. Hudson, West Fairview; H. Hershey Farnsler, Harrisburg; Joel M. Peters, Albion; Charles G. Strickland, George W. Schlindwein, Erie; Andrew O'Neil, Uniontown; John M. Gelwix, Chambersburg; Guy L. Zimmerman, Lemasters; William J. Pennock, Blairsville; Edwin S Cooper, Robert G. Boak, Harry R. Wilson, New Castle; Charles J. Pfleuger, Fogelsville; William B. Trexler, Fullerton; J. Frederick Wagner, Allentown; John W. Kerschner, Forty Fort; Persis Rosamond Straight, Bradford; Burg Chadwick, Smethport; Harry B. Mead, Stoneboro; Samuel J. Boyer, Siglerville; Richard M. Johnson, McVeytown; William H. Kohler, Milroy; D. Clark Nipple, Newton Hamilton; Walter L. Angle, East Stroudsburg; Joseph F. Miller, Bushkill; Thomas F. Branson, Rosemont; Harry E. Klase, Reid Nebinger, Danville; W. D. Chase, H. J. Schmoyer, Bethlehem; A. Harper Guiley, George B. Wood Field, Easton; Charles Edward Allison, Elysburg; Leroy Edgar Chapman, Warren.

Samuel G. Coons has been transferred from the Adams to the Center County Society.

Ernest L. Ward has been transferred from the Susquehanna to the Tioga County Society.

William L. Hunter (Jefferson Med. Coll., '68) died at his home in Turtle Creek, January 7, from cerebral hemorrhage, aged 62.

Samuel M. Todd (Univ. of Pennsylvania, '65) died at his home in Boyertown, January 2.

George C. Borst (Bellevue Hosp. Med. Coll., '76) died at his home in Newville, January 8, aged 52.

George A. Garries (Cleveland Med. Coll., 81) died at his home in Erie, December 25, aged 60.

George L. Hatfield (Jefferson Med. Coll., '00) died at his home in Uniontown, recently.

Gustavus A. Bachman (Jefferson Med. Coll., '74) died at his home in Philadelphia, January 8, aged 64.

William A. Klisa (Coll. Phys. & Surg., Baltimore, '96) died at his home in Austin, recently.

William Denney (Miami Med. Coll., Cincinnati, '79) died at his home in Washington, February 1, from paralysis, aged 52.

Edward B. Marsh (Jefferson Med. Coll., '92) died at his home in Greensburg, January 16, from diabetes, aged 37.

Joseph A. Horn is no longer a member of Carbon County Society (removed).

John C. Cotton and Howard V. Merrell are no longer members of Crawford County Society (removed).

Simon F. Ernest is no longer a member of the Dauphin County Society (removed).

Oree N. Chaffee is no longer a member of the McKean County Society (removed).

Thorne Cornelius and William E. Park are no longer members of Tioga County Society (removed).

John F. Norris is no longer a member of York County Society (removed).

Thomas Purcell has resigned from the Erie County Society.

Thomas A. McCauley has resigned from the Huntingdon County Society.

Elizabeth C. Spencer and A. Augustus Hintze have resigned from the Montgomery County Society.

E. Hunter Perry has resigned from the Somerset County Society.

John Gilbert has resigned from the York County Society.

David C. Huffman has removed from Military Home, Ohio, to Pittsburg.

J. W. Merriman has removed from Leonard to 312 S. 52d St., Philadelphia.

Alice Lillibridge has removed from Olyphant to Connell Building, Scranton.

J. Sidney Hoffa has removed from Washingtonville to Benton.

Gilbert T. Smith has removed from Danville to Stamford, Conn.

Ellis A. Smith has removed from Snydertown to Sunbury.

John L. Phillips has removed from Philadelphia to Bellefield Dwellings, Pittsburg.

John W. Hamilton has removed from Clarendon to Warren.

John T. O'Donnell has removed from Warren to Sheffield.

John L. Burkholder has removed from Ruffsdale to New Castle.

Eugene R. Albough has removed from Hanover to Glen Rock.

Present membership 4723. S.

State News Items.

MARRIED.

Dr. Paul T. Hope and Miss Harriet Clawson, both of Mercer, December 27.

Dr. Samuel D. Risley and Miss Louise Robinson, both of Philadelphia, January 16.

Dr. Charles H. Henninger and Miss Florence Murdoch, both of Pittsburg, recently.

Dr. Walter de la M. Hill and Miss Julia Tompkinson, both of Everett, December 31.

DIED.

Dr. Thomas M. Armstrong, in Philadelphia, January 4, aged 67.

Dr. W. W. Luman (Jefferson Med. Coll.) in Mt. Holly Springs, January 17, aged 68.

Dr. Theodore H. Seyfert (Univ. of Pa., '67) in Philadelphia, January 27, from nervous disease.

Dr. Benjamin Frantz (Jefferson Med. Coll., '46) in Waynesboro, February 1, from angina pectoris, aged 83.

Dr. George W. Hnebner (Jefferson Med. Coll., '93) in Johnstown, December 21, from pneumonia, aged 40.

Dr. Joseph J. Cummings (Jefferson Med Coll., '74) in Philadelphia, January 7, from pneumonia, aged 50.

Dr. William F. Sowash (Jefferson Med. Coll., '74) in Irwin, from cerebral hemorrhage, January 16, aged 68.

Dr. John Roberts Umberger (Pennsylvania Med. Coll., '61) in Dauphin, January 2, from cerebral hemorrhage, aged 77.

Dr. William F. Johnston (Starling Med. Coll., Columbus, Ohio, '82) in Etna, January 1, from typhoid fever, aged 52.

Dr. Edward S. Horner (Medico-Chirurgical Coll., '99) in Turbutville, from the effects of an overdose of morphin taken to relieve neuralgia, December 21, aged 40.

ITEMS.

Dr. W. O. Lantz is quite ill at his home in Lemasters.

Dr. Elias G. Roos, Scranton, is convalescent from typhoid fever.

The Lehigh Valley Dental Society held its annual convention in Bethlehem, January 21.

Dr. George A. Parker, Southampton, has just recovered from an attack of pneumonia.

Dr. L. Webster Fox has been elected president of the Philadelphia Medical Club, and Dr. J. Gurney Taylor, secretary.

Dr. James Tyson is the newly elected president of the College of Physicians and Dr. G. E. de Schweinitz is the secretary.

The College of Physicians of Philadelphia has received from Mr. Andrew Carnegie $100,000 toward the erection of its new building.

Dr. F. H. Macfarland, Philadelphia, was thrown from his carriage in a runaway accident, January 8, fracturing his right arm and leg.

Dr. Leon Gottschalk, Chester, has been appointed physician at the Marcus Hook State Quarantine Station in place of Dr. Harry Horning, resigned.

Dr. A. C. Abbott, Philadelphia, is on the program for a paper before the Section on Public Health of the New York Academy of Medicine, February 12.

Dr. Abraham. H. Strickler, Waynesboro, was recently elected president of the Landis Tool Company, Waynesboro.

Drs. John and James Montgomery, who were called to Chambersburg during the illness of Dr. P. Brough Montgomery, have returned to Buena Vista, Florida.

Dr. J. F. Edwards has asked for appropriations for the Pittsburg Bureau of Health as follows: $15,000 for thirty medical inspectors, $3,600 for four nurses, and $1,000 for one head nurse.

The Typhoid Fever Epidemic at Scranton is on the decline, but diphtheria and scarlet fever are adding to the trouble. Up to January 28, 1116 cases of typhoid, 142 of scarlet fever and 131 of diphtheria, with one hundred deaths from typhoid, have been reported.

Drs. J. Guy McCandless, Pittsburg, and James B. Walker, Philadelphia, were, on February 1, appointed by Governor Stuart members of the State Medical Examining Board. The former is reappointed. The latter is the president of the Philadelphia County Medical Society.

The Medico-Legal Society of Philadelphia has elected the following officers for the year 1907: President, Dr. George Mays; first vice-president, Dr. William Ruoff; second vice-president, Joseph Savidge, Esq.; secretary, Dr. W. T. Hamilton; treasurer, Dr. G. M. D. Peltz; censors, Dr. S. P. Gerhard, S. L. Wanamaker, Esq., and James Wolf, Esq.

Dr. Theodore Schott, of Bad Nauheim, lectures February 6, before the College of Physicians, on the treatment of chronic diseases of the heart; and in the afternoon of February 7, at the University, on chronic muscular diseases of the heart; on February 8, at Jefferson Medical College, on acute overtaxing of the heart; and at the Medico-Chirurgical College, on the pathology and therapeutics of angina pectoris. He will be entertained by Drs. S. Lewis Zeigler, S. Solis Cohen, James Tyson, and James M. Anders.

Reviews.

PROGRESSIVE MEDICINE, Vol. IV., December, 1906. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 349 pages, with 29 engravings. Per annum, in four cloth-bound volumes, $9.00; in paper binding, $6.00, carriage paid to any address. Lea Brothers & Co., Philadelphia.

A casual glance through the pages of the September number of Progressive Medicine reveals a great deal of new matter on many interesting subjects. Much of importance on the heart, lungs, and blood vessels, takes up the first section. Obstetrics and diseases of the newborn are fully gone into, followed by a careful review of the best progressive ideas concerning syphilis, diseases of the skin, and diseases of the brain and nervous system.

In the December number, J. Dutton Steele, M. D., reviews the latest knowledge pertaining to diseases of the digestive tract and allied organs, the liver, pancreas, and peritoneum. In this section is found much new and interesting matter which is well worth a careful perusal.

In the next section Dr. William T. Belfield has something to say of the latest views on diseases of the genitourinary system.

Following this Dr. John Rase Bradford discusses diseases of the kidneys giving latest treatment, diet, and theories regarding salt in producing edema.

Dr. Joseph C. Bloodgood seems to think, judging from recent literature, that the subject of fractures is not given the attention it deserves by American surgeons. In a section of more than one hundred pages he gives the latest treatments in vogue in Europe, illustrating some of the more complicated fractures by *x*-ray plates. He also takes up the discussion of dislocations, amputations, and the general surgery of the extremities, including diseases of the bones. In this section Bier's treatment with hyperemia is very fully explained, and the method of applying it illustrated by a number of excellent cuts. The most important points brought out by Bier's colleagues in their discussion of his treatment at the German Surgical Congress are given here with a short paragraph from each participant relating his experience with the treatment.

The first section by Dr. Landis is a résumé of the new suggestions in the treatment of disease. The writer does not claim that anything especially new has appeared for the past year, but thinks important methods already known have been more fully emphasized. He thinks, from the number of articles relating to diet and fresh air, that the value of these measures is steadily gaining ground. J. T. H.

VEST POCKET ABSTRACT SERIES ON MEDICINE, DENTISTRY AND PHARMACY. Medical Abstract Publishing Company, Pittsburg.

Two volumes of the Abstract Series, Chemistry and Anatomy, have been brought to the reviewer's notice.

The admirable arrangement of the subject matter and its wide range, covering as it does all the essentials without going into details, place them in the first rank of books designed to aid the student in remembering salient points and in formulating exact answers to questions. Their value lies not so much in the knowledge they impart as it does in forming brief and intelligent answers to any question which may be put to the student in order to bring out his knowledge of the subject. J. T. H.

ANATOMY, DESCRIPTIVE AND SURGICAL. By Henry Gray, F. R. S., Edited by T. Pickering Pick, F.R.C.S., and Robert Howden, M. A., M. B., C. M., New American Edition. Thoroughly revised and reëdited with additions by John Chalmers DaCosta, M. D., Illustrated with 1132 elaborate engravings. Lea Brothers & Co., Philadelphia.

The friends of Gray's Anatomy are legion and its popularity is attested by the recent American edition which has been thoroughly revised and brought up to date under the able direction of Dr. John Chalmers DaCosta.

The student of fifty years ago found in it his counselor and guide and the practician of to-day still esteems it indispensable. It has stood the test of time and out-rivaled the numerous works which have appeared in the field against it.

Notable changes have been made in this new edition, including the addition of about five hundred illustrations, many being done in colors. The special articles on histology and embryology found in former editions have been wisely eliminated, no single volume sufficing to cover the great fields of anatomy, histology and embryology. The essential points, however, of embryology and histology are given wherever they have a bearing on the intelligent study of anatomy.

Numerous entire sections have been rewritten, especially those devoted to the nervous system and lymphatics, while the paragraphs on surgical anatomy have been revised to meet the present day advancement on this subject.

The section devoted to the blood vascular system and the one devoted to the development of the brain, its blood supply and convolutions, have been notably benefited by the revision, and the many colored illustrations elucidate the careful study of these subjects.

The numerous improvements, wrought in this monumental work preclude the possibility of separate mention. Every section of the book presents exhaustively the present day knowledge of the subject it handles and impresses the reviewer with the fact that the work can never be improved upon. H. S. F.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M. D., Ph.D., LL.D., Professor of Medicine and of Clinical Medicine at the Medico-Chirurgical College, Philadelphia. Seventh edition, revised and enlarged. Octavo of 1297 pages, fully illustrated. Cloth, $5.50 net; sheep or half morocco, $6.50 net. Philadelphia: W. B. Saunders Company, 1906.

The several editions through which this valuable work has rapidly passed, attest its great merit, and as each new production has required careful revision with incorporation of the results of the latest medical research, this seventh edition comes to us in a wonderfully perfect and practical form.

All nonessentials have been religiously culled out; each topic is scientifically classified and discussed in a terse, plain, straightforward style that more medical authors would do well to imitate.

Fifty-six charts of differential diagnosis, personally vouched for by the author, are scattered throughout the work and form a great aid to the student and practitioner in cases of doubtful and difficult diagnosis.

In all respects the book is well up to date. The rôle of the mosquito in malaria, plates showing *x*-ray views in arthritis deformans and curvature of the tibia and fibula in rachitis, the treatment of diphtheria with antitoxin, the Widal reaction in typhoid fever, appendicitis and influenza in their various types and their appropriate treatment,—all are duly noticed.

He speaks of food infections and ptomain poisoning, but we do not discover any mention of autointoxication, which seems strange, nor does he mention the high arterial tension following this condition as a cause of chronic Bright's disease, which many modern observers think most likely and common.

The work is attractively gotten up. The paper is fine and a careful examination fails to disclose a single typographical error. Altogether it is a most valuable addition to any medical library and can not be too highly recommended. C. M. P.

NEW BOOKS.

A Manual of Pathology. By Guthrie McConnell, M. D., Pathologist to the St. Louis Skin and Cancer Hospital and to St. Luke's Hospital, St. Louis, Missouri. 12mo of 523 pages, illustrated. Philadelphia: W. B. Saunders Company, 1906. Flexible leather, $2.50 net.

The Elements of the Science of Nutrition. By Graham Lusk, Ph.D., M. A., F. R. S. (Edin.), Professor of Physiology at the University and Bellevue Hospital Medical College, New York City. Octavo of 326 pages, illustrated. Philadelphia: W. B. Saunders Company, 1906. Cloth, $2.50 net.

A Manual of Normal Histology and Organography. By Charles Hill, Ph.D., M. D., Assistant Professor of Histology and Embryology, Northwestern University Medical School, Chicago. 12mo volume of 463 pages, with 312 illustrations. Philadelphia: W. B. Saunders Company, 1906. Flexible leather, $2.00 net.

A Text-Book of Pathology. By Alfred Stengel, M. D., Professor of Clinical Medicine in the University of Pennsylvania. Fifth revised edition. Octavo of 977 pages, with 399 text-illustrations, many in colors, and 7 full-page colored plates. Philadelphia: W. B. Saunders Company, 1906. Cloth, $5.00 net; half morocco, $6.00 net.

A Text-Book upon the Pathogenic Bacteria. For Students of Medicine and Physicians. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. New (5th) edition. Octavo volume of 647 pages, fully illustrated, a number in colors. Philadelphia: W. B. Saunders Company, 1906. Cloth, $3.50 net.

A Text-Book of Diseases of Women. By J. Clarence Webster, M. D. (Edin.) F. R. C. P. E., F. R. S. E., Professor of Obstetrics and Gynecology in Rush Medical College, in affiliation with the University of Chicago. Large octavo of 712 pages, with 372 text-illustrations and 10 colored plates. Philadelphia: W. B. Saunders Company, 1907. Cloth, $7.00 net; half morocco, $8.00 net.

Atlas and Text-Book of Human Anatomy. Volume II. By Professor J. Sobotta, of Wurzburg. Edited, with additions, by J. Playfair McMurrich, A. M., Ph.D., Professor of Anatomy at the University of Michigan, Ann Arbor. Quarto volume of 194 pages, containing 214 illustrations, mostly all in colors. Philadelphia: W. B. Saunders Company, 1906. Cloth, $6.00 net; half morocco, $7.00 net.

A Text-Book of Pharmacology. Including Therapeutics, Materia Medica, Pharmacy, Prescription Writing, Toxicology, etc. By Torald Sollmann, M. D., Assistant Professor of Pharmacology and Materia Medica, Western Reserve University, Cleveland, Ohio. New (2d) edition. Octavo of 1070 pages, fully illustrated. Philadelphia: W. B. Saunders Company, 1906. Cloth, $4.00 net; half morocco, $5.00 net.

Syllabus of Lectures on Human Embryology: an introduction to the study of Obstetrics and Gynecology for Medical Students and Practitioners; with a Glossary of Embryological Terms. By Walter Porter Manton, M. D., Professor of Clinical Gynecology and Professor Adjunct of Obstetrics in the Detroit College of Medicine; Fellow of the Zoölogical Society of London, of the Michigan Academy of Sciences. Third edition. Revised and enlarged. Illustrated with a colored frontispiece and numerous outline drawings. 12mo, 136 pages; interleaved throughout for adding notes. Bound in extra cloth. Price, $1.25, net. F. A. Davis Company, Philadelphia.

Conservative Gynecology and Electro-Therapeutics. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity. By G. Betton Massey, M. D., Attending Surgeon to the American Oncologic Hospital, Philadelphia; Fellow and ex-President of the American Electro-Therapeutic Association, etc. Fifth revised edition. Illustrated with twelve original full-page chromo-lithographic plates of drawings and paintings, fifteen full-page half-tone plates of photographs made from Nature, and 157 half-tone and photo-engravings in the text. Complete in one royal octavo volume of 467 pages. Extra cloth, beveled edges. Price, $4.00 net. F. A. Davis Company, Philadelphia.

Societies.

MEETING OF THE PENNSYLVANIA SOCIETY FOR THE PREVENTION OF SOCIAL DISEASE.

At a meeting of the Pennsylvania Society for the Prevention of Social Disease held December 20, 1906, in the College of Physicians of Philadelphia, a discussion was held on a topic of vital interest to the people at large, "Social Economics of Venereal Disease."

Professor Thomas Morgan Rotch of Harvard University spoke on "Venereal Disease among Children"; Dr. W. Travis Gibb of New York, on "The Criminal Aspects of Venereal Infection among Children"; Prof. C. W. A. Veditz of Washington, on "The Social Economics of Venereal Disease"; Talcott Williams, on "The Laity and Venereal Disease"; and Rev. Floyd W. Tomkins, on "The Clergy and Venereal Disease." A general discussion followed.

The Pennsylvania Society was founded about a year ago as a local organization, and has grown in a short time into a state-wide movement with over 700 members. Its two avowed objects for the year are the education of the public with regard to the prevalence and transmissibility of venereal disease, and the entire absence of hospital provision for its treatment, except at Blockley. It aims especially at an educational work of prevention by laying the facts plainly before the people and allowing them to act with eyes open instead of through a screen of false modesty that has resulted in a large annual mortality and a far larger surgical and medical morbidity, especially among the women and children.

The following letter is being mailed to every adult in the city of Philadelphia, and eventually will go to every adult in the state.

To the Citizens of the Commonwealth of Pennsylvania:—

In the Pennsylvania Society for the Prevention of Social Disease a movement has been inaugurated for the furtherance of which the officers and executive committee desire your interest and active support. Its active membership includes nearly seven hundred physicians of the State of Pennsylvania. It is proposed to attack the problem of venereal disease along the general lines that have been followed in combating other infectious conditions, and conspicuously in the fight against tuberculosis. At present neither the medical profession nor the lay public should be asked to sanction measures other than those of an educational nature. It would seem just, however, in the presence of a widespread venereal infection, which spares no class even when free from misdoing, that laymen should be placed in possession of their only safeguard, the facts, to which they have a clear title. Women, rich and poor, bear the brunt of the storm. They suffer disease and sterility in silence and in ignorance that the cause is often the double standard of morals that admits of male license, yet requires the female to be pure. This society hopes primarily to present the facts regarding normal sexual hygiene. Much will be accomplished if the laity, male and female, be informed with authority of the need for early instruction in the home, especially regarding nature's laws, and later as to her imperative demand for chastity in both sexes. Thus, only, will the health of the community be safeguarded.

Practical evidence of the existing state of affairs is afforded fathers and mothers in the report of nearly one thousand cases of venereal disease treated annually in the Philadelphia Hospital alone, with as many more in the wards in a chronic state. From this and every focus proceeds a danger of both innocent and criminal infection that should not be ignored. Though the poor man and the poor man's daughter suffer most, the statistics among the so-called higher classes afford the physician a no less certain cause for reflection and regret. Adequate provision for the hospital treatment of venereal disease, the education of private and hospital patients concerning the means of its transmission, and the importance of sexual health as a prerequisite to marriage, are all matters that should interest you.

Your hearty coöperation is solicited. We ask you in your double capacity as a citizen of the Commonwealth and a trusted ally of the physician to openly enlist in the membership of the society. This movement will attain exactly the measure of success that you demand for it by your support.

Faithfully yours,
Abraham M. Beitler, President.

Hon. Abraham M. Beitler,
Hon. William H. Staake,
Talcott Williams, Esq.,
Dr. Joseph Price,
Dr. Jay F. Schamberg,
Dr. Robert N. Willson,
Executive Committee.

HARRISBURG ACADEMY OF MEDICINE.

Infantile Scurvy—Its Manifestations and Diagnosis, was read at the Academy of Medicine, Friday evening, December 28, 1906, by Prof. Linnaeus Edford LaFetra, A. B., M. D., Instructor in Diseases of Children, Columbia University. He said in part:—

"Undoubtedly, scurvy has occurred in infants for centuries, but it has not been sufficiently frequent for extended or careful study until the last two decades. During this time the very common use, by those who can afford it, of dried proprietary infant foods or of sterilized milk, has greatly increased the number of such cases. . . . . The English were the pioneers in the study of the disease and in the recognition of the distinction between ricketts and scurvy. Cheadle was of the opinion that 'acute ricketts,' so-called, was a compound of ricketts and scurvy. . . . Barlow, after a study of eleven cases with postmortem examination of two, showed the essential nature of the disease and gave it the name of 'infantile scurvy.' The Germans, with their tendency to fasten a proper name to every disease, called it Barlow's disease.

"Some of the chief features as summarized by Barlow are as follows:—(1) Predominance of lower limb affection with (a) immobility, (b) excessive tenderness, (c) general swelling of the lower limbs due for the most part to subperiosteal hemorrhage, (d) skin, shiny and tense but without heat and pitting, (e) thickening of the shaft of the bone, (f) liability to fracture near the epiphysis; (2) swelling of the gums; (3) the tendency to hemorrhage either into the skin, subcutaneous tissues, mucous membrane, or rarely into the viscera; (4) the definite and rapid improvement upon antiscorbutic diet. The writer states that as concrete instances are the best means of illustrating the disease, the following cases have been selected from among those seen in private practice as their histories are more reliable and the patients were more carefully followed afterward than can be done in hospital and dispensary work. He then gives the histories of seven cases, three typical and four unusual forms of the disease. Taking the histories as a whole, they give a classical description of the disease of scurvy and we find the following to be the most prominent and most usually present symptoms: Pain, tenderness and swelling of the limbs, usually the lower; fear of having the limbs moved; children usually ashy pale; swollen gums; history of having been fed on proprietary food and sterilized milk."

Professor LaFetra then reviewed the results of the collective investigation of infantile scurvy by the American Pediatric Society.

"Next to Barlow's writings, this report is the most valuable contribution to this subject. Statistics of 379 cases were collected, the reports coming from 138 physicians all over the United States and Canada.

"Summarizing the results, this investigation showed that the disease appears with equal frequency in male and female infants, for the most part between the ages of seven and fourteen months. Nearly two thirds of the cases appear during the latter half of the first year.

"The cases reported were mostly from private practice with good hygienic surroundings. One might almost say that the hygiene of the food, so far as sterilizing and great care against germs are concerned, is altogether too good.

"We rarely observe scurvy in tenement patients or those that are recklessly fed, since the taste of a bit of fruit or potato or other table food prevents the development of scurvy that might occur from the use of patent foods or even the boiled or sterilized milk which is quite commonly used by the tenement house population.

"As regards causation, the investigation showed that the food seemed to be the most important etiological factor. . . . The lack of freshness, or of fresh proteid particularly, seemed to be the main factor in each case. . . . As to the manifestations of the disease, the symptoms first seen, were, in order of frequency, pain and tenderness of the extremities, sponginess or puffiness of the gums, disability, anemia, cutaneous hemorrhages, swellings, and rarely hematemesis, hemorrhage from the rectum, and hematuria. The tenderness and swelling are found most frequently in the lower extremities especially over the lower part of the femur or lower part of the tibia. . . . The gums escaped in only sixteen out of 379 cases. Symptoms of ricketts were present in varying degrees in nearly one half of the cases..

"*Pathology.* The constant findings at autopsy have been subperiosteal hemorrhage in the diaphysis of the long bones, especially near the epiphyseal junction. There may be separation of the epiphysis and fracture. The hemorrhage may extend into the adjacent muscles, and rarely into the knee joints.

"*Complications.* There is always a concomitant anemia and a general cachexia which increases with the duration of the disease and the bleedings. Enterocolitis and gastroenterocolitis are not infrequent complications. Most to be dreaded are the pulmonary complications,—lobar pneumonia and bronchopneumonia. Most of the fatal cases either had pneumonia or succumbed to the progressive anemia.

"*Diagnosis.* For diagnosis it is only necessary to keep in mind that scurvy does occur in infants, that its main features are pain, tenderness and inability to move extremities with swelling of gums and a tendency to hemorrhage.

"If additionally there is the history of the child having been fed for a long time on sophisticated food or sterilized milk, the diagnosis is certain.

"*Prognosis.* The duration of scurvy is variable; if the faulty diet is continued without modification, the child . . . . dies. When proper treatment is instituted, improvement is almost miraculous. No results in medicine are more brilliant and none so easy to obtain. Within a comparatively few hours a pitiable, suffering, little paralytic is transformed to a contented baby, moving its arms and legs in the joy of living.

"*Treatment.* The cause is to be removed. We are to stop the use of devitalized food, and to give fresh milk, fruit juice either from the orange or grape, beef juice, raw egg albumin and purée of potato according to the child's digestive capacity. In infants over a year purée of potato or of green vegetables is especially satisfactory. To discontinue the sophisticated food is, after all, what is necessary; but cure is more rapid when the fruit juices are added."

The paper deserved and received the kindest of receptions, and Professor LaFetra was given a unanimous vote of thanks.

C. R. Phillips, Reporter.

SECTION ON GENERAL MEDICINE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, Monday evening, January 14, 1907, at 8:15, Dr. William E. Hughes, in the Chair.

Chronic Intestinal Autointoxication. Dr. F. Forchheimer of Cincinnati, in presenting this paper, said that intestinal autointoxication might be defined as that condition in which toxins formed in the intestines are absorbed by the organism in which they are produced. The use of this term, he said, had been objected to and that of enterotoxismos or intestinal toxemia substituted. Strictly speaking, only that process should be called autointoxication which is caused by the toxic bodies resulting from metabolism and not due to any exogenous cause such as bacterial activity. Attention was called to an analysis of seventy-seven cases examined by the ordinary clinical methods in which intestinal autointoxication was believed to be present. Children were excluded because the clinical picture in them differs very much from that in the adult. In concluding the paper Dr. Forchheimer said that, if the endeavor were made to get a composite picture from what had been said in order that the diagnosis of chronic interstitial autointoxication might be made, the following would have to be taken into consideration:—

(1) In the gastrointestinal tract there are Riggs' disease, various forms of stomach troubles, change in functional activity of the colon and demonstrable retention of feces due to one cause or another.

(2) In a large percentage of the cases indican is increased in the urine and a microscope shows in a large percentage of cases calcium oxalate, 50 per cent.; uric acid and urates, 25 per cent.; red corpuscles, about 30 per cent., in 28 cases about 33⅓ per cent.; the alternation of polyuria with oliguria was noted.

(3) Half of the females had menstrual trouble.

(4) Next to Riggs' disease, nervous symptoms were present in the largest number of patients. Of these 77 cases, 33 had headaches.

(5) In a large number (58 out of 77) cardiovascular changes were observed; over one half were due to neuroses and to myocardial conditions.

(6) Of the 77, 50 cases had locomotor symptoms, gouty joints, but especially muscular symptoms.

(7) Twenty-two patients had skin lesions. From the combination made by various symptoms, the diagnosis of chronic intestinal autointoxication should be easily made and, as a matter of fact, this is the case in practice as is shown when this diagnosis is followed by the logical therapeutic measure. The great difficulty is pointed out of determining the importance of the intoxication in an individual case; whether it produces all the symptoms, whether it is the cause or the result of other conditions, whether it is the product or the predisposing cause. The greatest caution should be taken before chronic intestinal autointoxication should be looked upon as the final diagnosis. In the selected cases this diagnosis was made only ten times. In all the other cases the autointoxication was looked

upon simply as a contributory cause, present and requiring treatment, but not the principal disease.

Dr. Hobart A. Hare in opening the discussion said that in the condition of autointoxication in a large percentage of cases the effects of the toxic materials are exercised upon the nervous system, upon the muscles and joints, thus producing widely varying symptoms. Certain articles of food were said to produce toxicity and a case was related in which eggs sometimes caused this effect. One class of cases cited was that presenting a particular type of dull constant headache for days or weeks, unrelieved by the ordinary methods, nearly always associated with the presence of excessive phosphates in the urine, the urine being alkaline. Another class of cases was unaccompanied by pain, but associated with profound melancholia and depression.

An important point in his opinion is that of the activity of the kidneys in regard to the elimination of poison. He emphasized the need of renal purges instead of simply purges by the bowel. The necessity was pointed out of studying the condition of the bowels in relation to enteroptosis, believing that most of the poisons absorbed under these circumstances are from the intestine and not from the stomach, and that good results can not be secured until the enteroptosis is corrected. The two types of autointoxication, namely, that due to intestinal absorption and that due to faulty metabolism, were referred to. These are frequently confused and should be separated. The intestinal cases can be relieved to some extent by renal and intestinal purge and some drugs, while the second is not usually benefited to any great extent by these methods.

Dr. David L. Edsall has found from his investigations that the total of ethereal sulphate may be increased in the urine and yet indican or phenol, one or the other, occasionally both, may not be definitely increased. and that phenol is more irregular than either of the others. He believes that the increase of phenol is a comparatively uncommon thing and of some special significance. The examination of the urine, however, in this relation, he regards as absolutely valueless unless it is carried out repeatedly. The examination of the urine as an index to the existence of putrefactive processes, while in a large proportion of cases useful, in a large number of cases, also, is misleading. He believes, therefore, that, from the examination of the urine alone, the conclusion is not warranted as to whether abnormalities in the urine are the consequences of changes in the intestinal tract or the result of abnormalities in the liver, excretory or various other organs in metabolism. His feeling is that the diagnosis of gastrointestinal autointoxication is a diagnosis that ought to be applied to cases in which there is found other and distinctive evidence by more perfect methods of disorder of the gastrointestinal tract.

Dr. Joseph Sailer attaches much importance to the study of the activity of the ferments in the gastric juice and believes that there is unquestionably a great variety of conditions both natural and artificial which have the capacity of inhibiting ferment activity in the stomach and also a great variety of artificial conditions which have the capacity of limiting the ferment activity in the intestines. Mention was made of cases studied with reference to the acid content and clinical symptoms. Various cases of migraine could be brought on by certain food, relieved as soon as the diet was corrected. An interesting group was that in which the symptoms were referable to the peripheral nerves, only relieved by lavage of the stomach, purgation and other treatment applied usually to the gastrointestinal tract.

Dr. Forchheimer in closing said that the object of the paper was to present a clinical picture of the whole condition and not to present the presence of indican as a specific symptom in any way. He agreed with Dr. Edsall that examinations of the urine to be of value must be made repeatedly. If this were done and indican found in every specimen its presence was probably indicative of something abnormal. He has experimented largely in a clinical way with intestinal antisepsis and believes a good mode of administration is in the salol shellac coated pill. One of the best antiseptics he believes to be betanaphthol. Next to this is menthol. Following this his choice is for permanganate of potassium. Calomel, of course, acts as an antiseptic, but he regards castor oil as the best of all intestinal antiseptics and if given freely will produce as nearly as is possible asepsis of the intestines.

Transactions of the Allegheny County Medical Society.

JANUARY EXECUTIVE MEETING OF THE ALLEGHENY COUNTY MEDICAL SOCIETY.

The regular quarterly executive meeting of the Allegheny County Medical Society, January 8, 1907, was called to order at 3 P.M. in Dispensary Hall, Dr. E. W. Day presiding. Minutes of the previous executive meeting were read and approved. The Treasurer's report together with that of the auditing committee received and ordered filed as read; likewise the report of the editorial committee.

The nominating committee placed in nomination the following: President, R. W. Stewart; First Vice-President, Dr. M. C. Cameron; Second Vice-President, Dr. Dewitt D. Nettleton; Third Vice-President, Dr. Edward Stieren; Fourth Vice-President, Dr. R. L. Walker; Recording Secretary, Dr. Edward E. Mayer; Corresponding Secretary, Dr. W. H. Cameron; Treasurer, Dr. W. B. Ewing; Censor, Dr. T. G. Simonton; District Censor, Dr. Theodore Diller.

There being no opposition the Secretary cast a ballot declaring them all elected.

Delegates to State Society: Drs. E. W. Day, R. R. Huggins, A. Koenig, W. S. Foster, E. B. Heckel, F. L. McCready, Theodore Elterich.

Alternates to the State Society: Drs. S. H. McClymonds, W. McCombs, C. E. Linderman, J. C. Burt, W. C. Wallace, C. C. Mechling, R. A. Brenneman, Chas. J. Ellis, A. R. McCready, A. R. Hampsey, H. Morrow, L. O. Miller, Walter F. Donaldson, J. I. Johnston.

The following standing committees were appointed by the incoming President, Dr. R. W. Stewart.

Necrology, Drs. Foster, Day and Moyer.

Program, Drs. Litchfield, Arbuthnot and McKelvy.

Editorial, Drs. Gaub, Grayson and Mechling.

Various matters of public policy were referred to the Committee on Public Policy and Legislation and at the adjourned business meeting, January 15, 1907, their report was adopted, as follows:—

The Committee on Public Policy and Legislation begs leave to submit the following report in accordance with instructions received at the last executive session of this Society.

Communication of the Committee on Inebriate Hospital:—

We would suggest that the Secretary of this Society be instructed to write at once and request a copy of the bill to be introduced at this session of the legislature so that we may the more emphatically endorse this well merited movement.

The proposed act of amending the existing marriage laws for the prevention of dissemination of tuberculosis, epilepsy and venereal diseases:—

It is respectfully suggested that the Secretary be instructed to procure as soon as possible a copy of the proposed amendment so as to enable us to more intelligently consider it.

The communication from the Retail Druggists Association in which the association proposes to place at the disposal of the members of the profession all so-called proprietary remedies whose formulæ are found in the National Formulary so that they may be prescribed with a full knowledge of their contents and accurate dosage.

It is respectfully suggested that a committee of three be appointed by the President to confer with a like committee of the Retail Druggists Association in order to more fully acquaint us with their plans.

Communication for proper memorial to the late Dr. N. S. Davis, the founder of the American Medical Association:—

It is respectfully suggested that the Treasurer of this Society be instructed to forward to Dr. J. M. Anders, 1605 Walnut St., Philadelphia, $25.00 as the contribution of the Allegheny County Medical Society.

Recommends the adoption of the following resolution:—

Resolved, That the letter of Dr. Whitcomb with the resolution suggested by him be forwarded to the committee on Scientific Work of our State Society with the request that the said committee give the subject careful consideration and act according to its own good judgment.

HEPATIC INSUFFICIENCY.

BY WILLIAM H. GLYNN, M. D.,
Pittsburg.

In studying the etiology of disease, there is a liability to overlook endogenous intoxication as a predisposing cause.

Bouchard says, "What renders possible

the development of an infectious disease is not the chance meeting of microbe and man. This meeting is constant, but is generally without result. Microbes, even the most dangerous, assail us. Infectious disease is only an accident, because the infectious agent finds only exceptional circumstances favorable. I do not say to its penetration, but to its development and its multiplication.'' In other words there is some functional or anatomic change within the body cells that makes the tissues acceptive to infections.

The cause of this change comes from within the organism, *i. e.* it is of an endogenous source, and while the term ''endogenous intoxication'' may be vague it more nearly designates the condition than any other. The source of these endogenous intoxications is varied. Wherever the chemistry of life is taking place, whether it be in the intestinal canal, glands or muscles, these toxins are being formed. We recognize the formation of these toxins as necessary during metabolism, yet their accumulation within the body would soon destroy life.

For simplicity we will group these substances, such as acetic acid, butyric acid, oxybutyric acid, leucin, tyrosin, uric acid and the various ammonia compounds under the generic term, as products of faulty metabolism.

These substances being present more or less constantly, what protection has the body against their deleterious action? The protective rôle of the liver has been known for a long time; but it remained for the French to more closely study the far reaching pertinacious consequences of an ''open liver'' in health and disease. Bouchard's dictum is, ''Keep the kidneys open and the liver closed'' in health and during disease.

To quote Richardson, who says, ''There is no organ of more importance to the general metabolism and consequent nutrition of the body than the liver; through it passes the whole of nutrition, and not only has it to change the form of food products, but it has also to arrest, transform and eliminate toxic products taken in with the food.''

The liver is known to remove indol and products of putrefaction, and the toxins of the infections from the blood. They are then excreted in part by the bile. Roger's experiments prove that rotten meat extract is twice less toxic when thrown into the portal vein than into the general circulation.

The term ''hepatic insufficiency'' was first applied by the French observers to a condition of the liver in which there is a loss of, or at least a suppression of, function of the liver cells. The condition may depend upon a simple functional inactivity or it may be due to a destruction of the secretory cells of the liver.

The degree of damage within the liver depends upon the degree of toxemia, personal susceptibility, and degree of lessened kidney and bowel function: these latter functions, as we shall see later, depend in a marked manner upon liver activity.

Hepatic insufficiency may be divided into two general classes, acute and chronic. The acute form is again divided into two periods, called, according to Bouchard, simple hepatic insufficiency when the kidneys by a compensatory action are eliminating the products that have escaped through the liver. It is during this period when the urine is hypertoxic with various compounds of perverted metabolism that there are no marked symptoms. Later when this compensatory action on the part of the kidneys fails, we have the second period known as renal hepatic insufficiency. At this time, through a failure of the kidneys to perform the extra amount of work imposed upon them, the body becomes overloaded with various compounds, and marked symptoms appear. This is often seen in acute infectious cirrhosis and cancer of the liver and in hyperemesis gravidarum and puerperal eclampsia.

The chronic form gives rise to that ill defined group of clinical symptoms known as the lithemic state, the pathology of which is a vicarious elimination of products of a faulty metabolism. Leo shows the close relation of this condition to irregular gout and conclusively proves the latter condition depends upon an insufficient liver.

In the chronic form of hepatic insufficiency the products of metabolism escaping through the "open liver" and entering the general circulation are thrown upon the various mucous membranes and organs of elimination, giving rise to a vast array of symptoms which are well known.

Headache, coated tongue, constipation, flatulence in which gases of putrefaction are passed, muddy skin, chronic eczema, lithemic pharyngitis, bronchitis, nonspecific urethritis, so-called gouty kidneys, heavy urine loaded with urates (so useful to the quack water doctors), restlessness, insomnia which is relieved by vasodilator drugs: these and many other symptoms are the results of a chronic "open liver."

Stucky of Lexington, in a paper entitled "Lithemic Nasopharyngitis Due to Systemic Disturbances," revealing a broadness of view which is refreshing, says, "By lithemic nasopharyngitis is meant that type of disease having a close etiologic relation to rheumatism and the lithemic diathesis and has its origin in autointoxication caused by absorption of by-products from the intestinal canal escaping through a faulty liver." It is chronic congestion rather than an inflammation. Further in the article he says, "Metabolism refers to the income as well as to the outcome of cell life and where there is more put in and kept in than can be put out, poison is the result."

As Stucky says, it is only a congestion at first, not an inflammation. We doubt if it would ever reach the dignity of an inflammation without some exogenous cause in the form of an intense irritation or bacteria. But there is small doubt that the mucosa congested and eliminating by-products is the ready action of the omnipresent germ. Then those acute infections of the mucosa of the nasopharynx, acute rhinitis, acute pharyngitis, tonsillitis, are undoubtedly often predisposed by these endogenous intoxications. The prevalence of these conditions in the fall of the year, when ingestion of food is increased and physical exercise decreased, is rather suggestive of a crowded liver. The heavily coated tongue, foul breath we so often encounter in acute tonsillitis can not always be explained by the temperature and saprophytic infection. The time from onset of disease until observation of patient is too short.

Nowhere does hepatic insufficiency stand out so prominently as an etiologic factor as in the pregnant woman. This fact has been so thoroughly covered and conclusively proven that we feel that an apology is necessary for introducing the subject. Each day sees some prominent authority appearing with those who believe that the large majority of the ills of the pregnant and parturient woman can be directly traced to acute hepatic insufficiency.

Edgar, in an article on "Hepatic Insufficiency in Obstetric Practice" from which I take the liberty to quote freely, says, "There is no doubt that a belief in the existence of a special autointoxication of pregnancy is rapidly gaining ground among obstetricians, pathologists and others whose attention is being especially directed to this subject." Further he says he is inclined to believe that hyperemesis, acute yellow atrophy, eclampsia, polyneuritis, etc., have a common origin. The headache, alterations in character, ptyalism, gastric disorders, are only minor disturbances which point more closely to the possibility of an autotoxic state.

Ewing finds that ninety-five per cent. of all cases of any variety of eclampsia show a hemorrhagic hepatitis. An anatomic change may be overlooked on superficial examination.

Parnall in refuting the "open liver" lays great stress upon the absence of anatomic change in the liver, though his case of eclampsia that came to autopsy showed areas of fatty degeneration. On careful microscopic examination the areas of fatty degeneration, cloudy swelling or even congestion may be noted. Quoting Ewing, who says, "Anatomical lesions certainly do follow and do not precede the disturbances of function, and there may very well be several steps between the loss of oxidizing capacity and cloudy swelling, fatty degeneration and necrosis of liver cells."

It seems very likely that in rapidly fatal cases coming to autopsy there may be only an "open liver," *i. e.* a liver in which functional change has not given away to structural change.

It is likely that it is these mild functional cases that give rise to the early controllable vomiting of pregnancy, which is undoubtedly not physiological. For besides vomiting there are generally other signs of a toxic character, headache, constipation which we fondly believe to be obstipation and therefore explained by mechanical causes, changes in character of patient; all these point to a pathological and not to physiological vomiting.

With our present state of knowledge we are not able to say just when functional disturbance gives way to structural change. If we were able to state when this takes place, we would know what cases emptying the uterus would relieve.

Cases in which structural changes have taken place within the liver will never be relieved by emptying the uterus. This is one factor condemning this procedure by the Catholic theologians.

The experience of William, of Baltimore, proves this. He reports six cases of pernicious vomiting with a mortality of fifty per cent. One in which he performed therapeutic abortion came to autopsy, in which he found lesions typical of acute atrophy.

While he believes there may be cases of reflex vomiting, he is inclined to look upon the majority as grave. The ammonia coefficient of ten per cent. in the urine is his guide. When it is above this figure he believes in prompt interference. A normal ammonia output points to nervous or reflex origin of the condition.

The nature of these points will not be discussed, as it opens questions of physiological chemistry beyond our ken.

Introgenous metabolism is disturbed by this "open liver." Metabolism, which at any time is in a delicate balance of anabolism or catabolism, is by some factor within the liver cells disturbed, and the "open liver" allows these products of faulty metabolism to circulate freely within the body.

Ammonia compounds, amido acids, then the products of fermentation within the bowel, such as acetic acid, butyric acid, get into the blood. Iirnoser says distinctly, "Eclampsia is due to an increase of ammonia compounds, the sign of failing liver action."

The conclusion of Stone is that "eclampsia is now generally recognized as a toxemia whose chief lesion is a degeneration and necrosis with multiple hemorrhages of the liver."

Now what part do the kidneys play in this drama? Bouchard says, "Keep the liver closed and the kidneys open." An open liver means closed kidneys. An "open liver" is not performing its physiological functions in forming bile and urea. Reduction of urea means lessened kidney function because urea is the great physiological diuretic." Joslin has shown that during the ingestion of bile the secretion of urine was increased fifty per cent. Lessened kidney secretion means nephritic congestion which in turn means albuminuria. By the time this much sought for symptom appears, there is far advanced liver disease.

In conclusion, we would ask your attention and discussion to the following points: Hepatic insufficiency is a predisposing factor in the cause of many acute and chronic affections of mucous membranes. It is the cause of those many conditions known as the lithemic state, and, at the present time, seems to be the most likely theory as to the cause of hyperemesis gravidarum and eclampsia.

DISCUSSION.

Dr. T. M. T. McKennan said that the paper gives a rational explanation of the so-called lithemic or uric acid condition. The subject of toxemia is a broad one and many factors are involved. It is of great importance in nervous and mental affections.

MacPherson divides causes of toxemia into three groups:—

1. Autointoxication as result of (a) physiological instability, (b) defective metabolism, (c) defective gland secretion, (d) autointoxication from liver and kidney insufficiency, (e) autointoxication from the alimentary tract.

2. Toxemia from microörganisms introduced into the system.

3. Voluntary toxic conditions from alcohol and drugs. When we note autointoxication we are inclined to think of its origin as from the alimentary tract, whereas this is but one cause.

Dr. R. R. Huggins believes that eclampsia is due to toxemia in the larger majority of cases. In his opinion the time has arrived when we should prevent eclampsia by the proper treatment of this toxemic condition.

There are, however, some cases in which the symptoms increase in severity in spite of diet and measures of elimination. When this occurs during the latter months of pregnancy when the child is viable, and if, after vigorous eliminative treatment, rest, diet, etc., we can not control the dangerous symptoms, labor should be induced: for by so doing we will be more likely not only to save the mother, but the child as well.

The danger signals are high blood pressure, headache, eye symptoms, epigastric distress, and extreme restlessness.

Dr. J. D. McClure said that in the study of autointoxication we find its manifestations vary from slight headache or nausea in one case to convulsions or eclampsia in another. This probably is due to faulty elimination, to autoinfection, or to imperfectly oxidized metabolic products.

The liver is not an emanatory organ, but secretory and its specialized work is to secrete bile. The bile not only aids digestion, but it is an intestinal and an hepatic antiseptic.

This subject of autointoxication is not well understood. Although a great deal has been written on this subject, much of it is only opinion or conjecture. The exact nature of the toxins or poisons are not known; neither where nor how they are formed.

I can not agree with the theory of hepatic insufficiency as the cause of autointoxication in the pregnant woman. Toxic symptoms are most frequent in the early months of pregnancy; after the third or fourth month, vomiting ceases and the woman continues during the remainder of the term of pregnancy in good health.

If nausea and vomiting be due to hepatic insufficiency why does not the liver become more diseased, hepatic metabolism disturbed, nausea and vomiting increased as pregnancy advances?

After pregnancy there is more work, greater metabolism, and more toxins formed to be eliminated. After a time the excretory organs adjust themselves to the new conditions and become more equal to the task of elimination. The system becomes more tolerant of the poisons, as is the case with many known narcotics. Should the emanatory organs fail to eliminate the increased formed toxins, the result will be gradual autointoxication to the extent of irreparable organic lesions, eclampsia and death.

Dr. W. H. Glynn, in closing, said that the most important question of the discussion was, when shall the uterus be emptied for the pernicious vomiting of pregnancy?

In the first place, when is vomiting of a pernicious character? When it threatens to destroy the life of mother and child.

At the present state of our knowledge, we can not say just when this grave disaster is going to take place. The experience of most men is that the liver seems to be the faulty organ. This fault seems to be functional in character, with or without structural change. Neither the symptoms, condition of patient nor any other sign tells us when structural change has taken place in the liver. Before this time the condition may, at any time, begin to improve. After structural change has taken place it is too late to save the mother. Then why sacrifice the child, if by some symptomatic indication the fruits of conception can be preserved until it is able to exist alone.

Further discussion of this question involves questions of social and theological character not to be discussed at this time or place.

A CASE OF SUBPERITONEAL MYXOSARCOMA SIMULATING A SCIATIC HERNIA.

BY NICHOLAS G. L. SHILLITO, M. D.,
Allegheny.

On July 26 last I saw Mrs. N. in consultation with her physician, who had been consulted in regard to a growth in the right gluteal fold which she first noticed about six months previously and which of late had been somewhat painful. On examination I found a tumor about the size of a lemon, which had the appearance of a lipoma, and advised its removal. On account of the apparently simple nature of the growth no history other than its duration was obtained, but I subsequently learned that she had not been well since the birth of her last child about one year before. The same day I removed the mass, which proved to be a lipoma, and closed the wound. It did well until the fourth day when it began to break down. On the fifth day it was entirely open, and a mass resembling a hernial sac filled the entire cavity. This mass I was able to return to the pelvic cavity, and found that it had escaped through the sacrosciatic foramen. After reduction I packed the cavity with gauze, and had the patient removed to Passavant Hospital and prepared for laparotomy.

The next morning I opened the abdomen down to what appeared to be the peritoneum, but which proved to be a large flabby mass filling the entire pelvis. Failing to enter the cavity, I separated the mass from the right pelvic wall, and with the assistance of Dr. Brenneman, who introduced a finger into the wound in the gluteal region, I found the opening and made the discovery that the contents of the supposed hernia was a portion of the tumor.

The mass consisted of a soft semigelatinous substance of the color of normal gut, streaked here and there by tissue the color of umbilical cord. It was adherent to or infiltrating everything in the region, almost completely enveloping the bladder; and had, by pressure or infiltration, created an opening through which a portion of it descended.

I attempted to close the opening, but the tissues were so friable that a suture would not hold. I covered the opening as best I could, packed the gluteal wound with gauze, and closed the abdomen.

The following day the abdomen became much distended, and she vomited some. A rectal tube was introduced and a high enema given, which relieved her of a great amount of flatus and some fecal matter, and the vomiting stopped. She was much more comfortable for eighteen hours, when she suddenly vomited about a pint of fecal matter, went into collapse and died.

I obtained permission to open the abdomen to discover if possible the cause of the obstruction and nature of the tumor.

The intestines were crowded to the upper part of the abdomen by the tumor, and an old adhesion, found about eight inches from the iliocecal junction, which kinked the gut produced the obstruction. The uterus, tubes, and ovaries were normal.

The tumor was removed, and, as nearly as I could determine, it originated in front of the broad ligament. It weighed about four pounds. The sections I made show it to be a myxosarcoma.

The points to which I wish to call your attention are (1) that a benign tumor in this region may conceal a hernia; (2) that it is difficult, if not impossible, to determine whether the contents of such a hernia is gut or neoplasm without removing a portion, which would be a dangerous procedure if it were gut.

FIVE INTERESTING NEUROLOGICAL CASES.

BY THEODORE DILLER, M. D.,
Pittsburg.

Case 1. *Convulsions and death due apparently to stone in the kidney*: A mulatto man, twenty-eight years old, who had been well except for dizziness during the past year, was for the first time in his life seized with a convulsion on November 18 while riding in a street car. He was brought to the Allegheny General Hospital. There he had another convulsion the next morning, and a third one four hours later. The following day he had two convulsions at six-hour intervals, and two more the same night. The next night he had seven; the following night ten convulsions; death occurred soon after the last one. The temperature had been normal since admission. It rapidly rose to 103 degrees just before death.

The convulsions were all of the same character. After an initial cry, there was a general convulsion with excessive rigidity and some opisthotonos followed by excessive perspiration, frothing at the mouth, with deep stertorous respiration and a weak, rapid pulse. The patient remained unconscious from fifteen to forty minutes in each attack. Between the first attacks he would converse readily, but appeared somewhat dull.

Two examinations of the urine showed it was acid and contained the slightest possible trace of albumin and considerable pus. We were at sea as to a diagnosis. Uremia and paretic dementia suggested themselves, but neither appeared quite satisfactory.

The autopsy by Dr. H. G. Palmer showed the left kidney to be functionally worthless. It was badly disorganized and contained in its pelvis and extending into its calices several large, irregular mulberry calculi.

Assuming that the patient died of uremia, it is hard to understand why this ancient kidney lesion should have set up such extremely acute symptoms and terminated the patient's life within a few days. (The specimen was exhibited.)

Case 2. *A tumor of the ponto-cerebellar angle*: (The specimen from this case, a tumor the size of a walnut at the ponto-cerebellar angle, was exhibited. The tumor was hard, globular in form, encapsulated, and very loosely attached to the pia. A miscroscopic examination by Dr. H. G. Palmer revealed that it was a gliosarcoma.)

The patient was a woman forty-three years old. Her symptoms covered a period of three years, the first to attract attention and call for treatment being hyperchlorhydria. But for two and a half years she had suffered from the usual symptoms of brain tumor,—severe headaches, vomiting, convulsions, vertigo and latterly of failing vision. A high degree of optic neuritis was present. Some impairment of hearing, with tinnitus appeared as the only localizing symptoms. The case was recognized as one of brain tumor, but the data obtained at a single examination did not appear to warrant a focal diagnosis. The patient was advised to go to a hospital for further observation. It was proposed that an operation should be done for the removal of the tumor if it could be localized; and if not, that a decompression operation should be done to relieve the general symptoms and especially the optic neuritis. The patient was very weak and declined to go to the hospital. Indeed, her condition forbade a very critical examination. She died two weeks later.

Case 3. *Complete recovery from a severe and typical attack of Landry's paralysis*: This was the case of a boy reported at a previous meeting of the society, October, 1902 (*American Medicine*, April 8, 1905). He was then seventeen years old. He had developed a rapidly ascending paralysis, which by the end of the fourth day left him completely paralyzed in all four extremities and in the diaphragm as well (as evidenced by the absence of out and in movements of the abdominal wall and of the patient's inability to cough). The neck muscles were very weak. The knee-jerks were absent; no muscular wasting. For a few days catheterization was necessary. There was no fever, no objective sensory changes, and no mental disturbance. After a brief stationary period, slow but steady improvement ensued; and this went on to complete recovery. The boy is now perfectly well and has been working for several months past. The leg muscles which were the first to be paralyzed were the last to recover.

Case 4. *A fatal case of chorea in a pregnant woman*: The patient, a young primipara in the seventh or eighth month of pregnancy, had, for several weeks, suffered from choreic movements of moderate severity. These movements had only within the last few days grown much more severe. On admission to the Allegheny General Hospital, the movements were of the most exaggerated type. Under ether they ceased and for a short time after it was withdrawn; then they returned with the same severity as before. A consultation with Drs. Miller, McKennan and other members of the staff was summoned; and it was decided to empty the uterus as soon as the husband's consent could be obtained. Before the consent of the husband could be secured, the patient collapsed. Movements ceased; the pulse became extremely feeble and the patient died a few hours later, evidently of acute exhaustion.

Case 5. *A fatal case of chorea in a girl sixteen years old*: The movements began January 1 and within the space of four days attained an extraordinary degree of severity, despite all efforts to control them. The patient bruised herself considerably by her movements, notwithstanding that every effort was made to protect her against such injuries.

The movements then ceased rather suddenly, and left the patient very weak, stuporous and with an apparent palsy of the left arm. She had developed a moderate fever (which soon subsided) and sordes on the tongue and teeth.

The patient died six days after the movements had subsided.

An interesting point in this case is that the patient had had a previous attack of chorea two and a half years before, which had been of a rather mild character.

In neither of these cases of chorea was there evidence of a cardiac lesion.

Death in cases of Sydenham's chorea is very rare; and this is the first to come under my personal observation. Chorea occurring in a pregnant woman, however, is regarded by all writers as of grave significance; twenty to twenty-five per cent. of such cases terminate fatally (Church and Peterson, Oppenheim).

DISCUSSION.

Dr. I. J. Moyer said that Dr. Diller's remarks on his case which proved fatal from convulsions recalls a case seen by himself in which the patient suddenly developed convulsions and died. On autopsy one kidney was found to be replaced by a cyst; no other cause of death was found.

Two fatal cases of chorea have occurred in his practice. One, a young man about seventeen years of age, died apparently from exhaustion from excessive choreiform movements of about ten days' illness.

The other, a girl aged fourteen (the worst case he ever saw), died in less than two weeks after onset, from effects of constant and violent choreic movements. Before death paralytic symptoms of cerebral origin, indicating probably exudative meningitis, were marked.

Dr. C. C. Hersman said that ninety per cent. of brain tumors cause optic neuritis, without reference to location. At present he has under observation a patient with possible brain tumor in which optic neuritis is extreme with various optic hallucinations. The dimness of vision is such that the patient can not distinguish features. Recently she had four convulsions and remained unconscious for thirty-six hours. She remained dizzy for two or three days, unable to sit up or roll over in bed without danger of falling out. The history and urinary examination in Dr. Diller's patient would indicate uremic poisoning.

Dr. T. M. T. McKennan said that regarding tumors at the base of the brain, it would seem that they are relatively common. He would like to call attention to one point and that is the occurrence of symptoms of brain tumor relatively sudden in young adults. In the past few months he has had three cases in young adults, and in all three the symptoms appeared within six months or a year after attacks of typhoid fever. Two of these cases were rapid with a fatal issue but unfortunately no postmortems were held. There seems a strong probability that they were tubercular in character.

Reports of County Societies.

CUMBERLAND—JANUARY.

The Cumberland County Medical Society held its regular quarterly meeting at the New Wellington Hotel, Carlisle, Tuesday, January 8, at 6:30 P. M.

The following members were present: Drs. Allen, Berry, Bowman, Diven, Emrick, Koons, Langsdorf, McCreary, Phillipy, Preston, Pilcher, Plank, Shepler, Shoemaker, Spangler, Van Camp, Kisner, Hudson, Hamacher, and as guests, Dr. McGary of Mechanicsburg and Dr. McKeehan of Carlisle.

The pressure of business was such that the entire meeting was devoted to it.

The order of business was however suspended until resolutions upon the death of Dr. Geo. C. Borst of Newville could be introduced and passed.

A letter from Dr. J. N. McCormack concerning the flat $5.00 fee for insurance examinations, and one from Dr. Ellenberger in regard to establishing a hospital for inebriates, dipsomaniacs and drug habitués were considered.

On the first the following resolutions were passed:—

I. That the following preamble and resolutions are adopted by this society in session at Carlisle, January 8, 1907:—

Whereas, Many of the life insurance companies have notified their medical examiners of reduction of examination fee from $5 to $3; and

Whereas, We, as physicians, realizing the responsibility incident to proper examination of the individual, believe such reduction to be unjust; therefore, be it

Resolved, That the Cumberland County Medical Society, and the medical profession in sympathy with them, in session assembled, do hereby declare such reduction to be unjust, and respectfully request that no physician legally authorized to practice medicine in Pennsylvania accept such a reduction of fee; and further, that any physician accepting such reduction be guilty of a breach of professional courtesy.

Resolved, That it is the sense of this society that hereafter in each examination for life insurance in which urine analysis is required the minimum fee shall be $5.

Resolved, That the several component societies forming the State Association be requested to adopt these resolutions.

II. That the above rates shall not apply to industrial medical inspections, without urinary analysis, for amounts less than $1000.

III. That no member of this society enter into any contract or agreement with any corporation, society, association, company or individual, to examine applicants for insurance for any stated salary or lump sum, thereby evading the spirit and instinct of the foregoing resolutions.

IV. That the payment of all fees shall be authorized by the home office of the society or corporation to which such application is made, and under no circumstance shall an examiner receive or accept any part of this fee from an agent or any other person or corporation, unless the full fee be paid by authority of the home office.

V. That each member of this society pledge himself or herself, in case a fellow-member be removed from the position of examiner for any corporation or society solely because of this action of the medical profession, that he or she will not accept an appointment from such corporation or society as examiner, nor make any examination for same in Pennsylvania.

VI. That each member of this society bind himself or herself, by a pledge to be presented by him or her to the secretary, to abide by these resolutions.

On the second the matter was referred to Dr. John Bowman for consideration and report.

A protest against the petition for licencing osteopathy was presented for signatures and signed by the members present.

A letter from Dr. Andrews in regard to the Dr. N. S. Davis memorial was read and laid on the table.

A banquet followed the business session.

HILDEGARDE H. LANGSDORF, Reporter.

DAUPHIN—JANUARY 1, JANUARY 8.

The January professional meeting of the Dauphin County Medical Society was held at the Harrisburg Academy of Medicine, Tuesday afternoon, January 1, 1907, at 3 o'clock.

A paper on "Arteriosclerosis" was read by Dr. J. Harvey Miller. The recital of clinical experience in a number of cases of arteriosclerosis with remote effects of same was followed by the definition, etiology, pathological anatomy, the usual clinical phenomena and treatment of this condition of arterial degeneration. The writer reviewed, at some length, the literature of the past year upon this important subject, giving particular notice to the papers of Dr. Richard C. Cabot of Boston, Dr. Joseph Collins of New York, Dr. G. W. McCaskey of Fort Wayne, an editorial in the *Journal of the American Medical Association* of October 13, an editorial in same of October 20, and papers of Dr. Harlow Brooks of New York, and Dr. James M. Anders of Philadelphia.

He concluded as follows: We should recognize the clinical importance of arteriosclerosis. Whether we decide to treat the condition medicinally or not, we should at least admonish our patient to pay strict attention to elimination; to abstain from alcohol, tobacco and coffee; to use condiments to but a limited extent; that hard mental labor and excessive muscular strain are contraindicated; in fact, "To get on the water wagon and lead the simple life."

The discussion was general and of an unusually interesting character.

The Dauphin County Medical Society held its annual election on January 8, 1907, at 3 P. M., which resulted in the election of the following officers: President, Dr. C. E. L. Keene; vice-presidents, Drs. J. W. Roop and J. C. DeVenney; secretary, Dr. C. R. Phillips; treasurer, Dr. F. D. Kilgore; reporter, Dr. C. M. Rickert; censors, Drs. J. W. Ellenberger and P. A. Hartman; delegate to Executive Council, Dr. D. S. Funk; alternates, Drs. W. H. Seibert and C. S. Rebuck.

The society then adjourned to meet at 8 P. M., at which time it had been decided to hold a reception to the new members and have a social gathering. At this meeting, Drs. Coover, Funk, Rahter, McGowan, Seibert, Hamilton and Bishop spoke on the benefits derived from an organization like the county society and the advisability of all the members of the profession, especially the young members, joining the society.

Dr. C. A. Rahter's address was of such historic interest to our society as well as the state society that it was agreed to have it published.

Dr. C. S. Rebuck, the retiring president, in his address on "Some Advantages of Affiliation with a Medical Society," said in part:—

Very briefly, on this, the evening of our annual election, I desire to outline some of the chief benefits that accrue from affiliation with a medical society. When the young graduate leaves college and enters upon the practice of medicine, he soon finds that his path is difficult and rugged. He should above all else, endeavor to be seriously in earnest, striving to start right and by the aid of hope and constant industry, enter upon the road which leads to success. In his practice the young man soon meets many questions of ethics which by deciding rightly or wrongly make or destroy his career. From his society association, he should be, and fortunately almost always is, governed by our Code of Ethics, which is the doctor's Golden Rule, and which has prevented many a wavering or ignorant man from falling. I am firmly convinced that the physician, young or old, who will literally follow this Code of Ethics will reap, sooner than he anticipates, great reward in increased practice, the respect of his colleagues and a satisfied conscience.

The young man who does not become a member of his home society will invariably (or those who are members and who do not profit by their opportunity) become narrow. This is especially true in the smaller cities where there are no clinics and postgraduate lectures to attend. Not mingling with his fellows in hearing and discussing medical topics, most men will do worse than become narrow, they will retrograde. We never stand still: Nature moves, and if we are not growing professionally and intellectually, we are certainly going backward.

Man is a social animal and the young physician if he be a stranger in the community will find it a very pleasant diversion to attend our sessions where he will meet socially his brother practitioners. Many warm friendships have had their foundations at a medical meeting, and the doctor, either young or old, will find many times in his career that the kindly word or advice of a brother stands him in good stead.

It is a great comfort to a young man, when in his first serious case, he may call in an older physician, who will advise as to the case and uphold him to the family. And, let me add, that there are very few, if any physicians, who are active members in their society, but who *will* support the young man. If you observe, you will note, that those men who through motives of self-interest, belittle a brother physician or his work, are not the men whom you see regularly at our professional meetings.

However, do not always consider a slight, or an inadvertent remark, as being premeditated. "Evil is wrought by want of thought as well as want of heart."

My next suggestion that membership in a society is mutually helpful to both the young man and the society as a whole, needs few remarks in way of proof.

He would be most narrow who would say that he derived no benefit from listening to a paper on a professional subject and hearing it discussed. Next to actual experience there is nothing as beneficial to the young practitioner as the medical meeting, for there "The collision of mind with mind in discussion, awakens reflection and deeper reasoning, and enlarges the scope of both the speaker and listener. Nowhere else can you study so well the individuality and style of the different physicians and discover the reasons why each one is what he is."

The opinions of the younger men on newer methods and discoveries, their explanation of modern laboratory technic, are always listened to with great respect.

As physicians we must never forget that we are public citizens in the larger sense. We have had certain privileges given us by law, and in return we have certain well defined duties to the community, especially true at this time in the ever growing domain of preventive medicine. Singly we can do little, but the profession united in a community may be of incalculable benefit. While an individual discovered vaccination, it has taken the concerted action of the whole profession to make it a universal custom.

The great white plague is slowly but surely being stamped out, through the united action of our societies.

We must meet these public questions, and the young physician, on receiving his license from the state, should accept his share of the responsibility.

Finally, the physician may do much toward uplifting his chosen profession through affiliation with a medical society. Ours is a noble profession, equal or superior to the ministry. A good doctor, morally as well as intellectually, does a vast amount of service to suffering humanity.

Disease and death are part of the eternal plan; disease is constantly afflicting earth's children in every clime; while death is busy from pole to pole. Fear of the former and dread of the latter are parts of human nature, and these cause mankind everywhere to employ physicians, the king and his subject, the millionaire and the beggar, wherever there is suffering, humanity turns to our profession. This reliance of mankind on you as a physician skilled to heal its wounds, brings you in contact with man's greatest interests. You are intrusted with secrets that would be confided to no other person, and are a guardian to every family in which you attend.

Our organization will develop all these good factors of heart, hand and brain in a young man, and lead him to be a *good* physician in the fullest sense.

In closing, let me quote from an eminent physician in advising young men, "Determine, therefore, under God, that in your efforts you will act like a man, from your diploma to your death bed, that you will begin well, continue well and end well, and will do nothing criminal, nothing that will not stand the strongest sunlight and the severest scrutiny; nothing, in fact, that you can not approve of with your hand on your heart and your face turned upward."

C. M. Rickert, Reporter.

ERIE—February.

At the regular meeting of the Erie County Medical Society, held at the assembly rooms of the Erie Public Library, on Tuesday, February 5, 1907, Dr. Grover W. Wende, clinical professor of dermatology in the University of Buffalo, read a paper and presented original photographic reproductions of cases coming under his own observation in Paris, Vienna and in this country. Many of the cases have not heretofore been published, some are anomalies and others only curiosities of medicine, but all the illustrations were exceedingly interesting and instructive.

Following is a list of the cases shown and described by Dr. Wende:—

Atrophy of the skin in a patient twenty years of age.

Acanthosis nigricans.

Morphea.

Alopecia areata.

Alopecia areata maligna, showing atrophy of the nails.

Mother and child suffering from alopecia areata maligna, indicating the probable contagious nature of the disease.

Alopecia areata maligna in a man, with complete loss of hair.

The same disease, showing atrophy and hypertrophy of the finger and toe nails.

Dermatitis vegetans.

Raynaud's disease.

Keratosis follicularis.

Xanthoma diabeticorum.

Rhinophyma.

Ditto.

Ditto, a case in his own practice; he has been asked for copies of this illustration by a number of foreign authors.

Ditto, occurring in a well-known character of his city, who had pedunculated tumors attached to the nose; these were subsequently removed.

Dermatitis exfoliativa.

The same disease in a male patient who made a complete recovery.

A photograph taken twenty-four hours before death of the patient, showing the universal distribution of the disease.

Ringworm of the beard.

Impetigo contagiosa circinata, with points of differential diagnosis between the two conditions.

Actinomycosis in a man affecting the lower jaw, infection probably taking place from a diseased tooth.

Dermatitis herpetiformis vesiculosum.

Unique case of the same disease.

Dermatitis herpetiformis pustulosum.

Ditto.

Dermatitis herpetiformis bullosum.

Ditto, involving the hands.

Atypical case of lipomata.

X-ray dermatitis.

X-ray dermatitis with breaking down of the skin and the formation of the slough in the foot, followed exposure to the rays for one and a half hours for the purpose of taking a photograph for suspected injury.

Necrosis of the hand following *x*-ray exposure for nine successive days for twenty minutes on each side of the hand. (Dr. Wende has not seen a burn which has occurred during the past three years, all the illustrations are from cases seen before that time; most of the damage was done in the early years of the *x*-ray. At the present time, in skillful hands, *x*-ray burns are not observed.)

Psoriasis.

Ditto.

Mycosis fungoides.

Ditto.

Ditto. Terminal stage of the disease. (Dr. Wende emphasized the great benefit in these cases from the *x*-ray treatment, and some of the results have been almost miraculous.)

Ditto, showing presence of two stages at the same time.

Melanotic sarcoma, now considered as a carcinoma, which develops from the skin in close proximity to a mole, especially when the mole has been subjected to irritation.

Erythema induratum.

Lichen scrofulosis. (Tubercle bacilli have never been found in the skin lesions of this disease, and it is believed to be due to a toxemia which expresses itself by this peculiar form of skin disease.)

Ichthyosis. (The alligator man.)

Same case in a different position.

Ichthyosis hystrix. (Nevus linearis.)

Ichthyosis hystrix, limited to the hands.

Ichthyosis hystrix, showing the plantar surfaces of the feet.

Nevus lipomatodes.

Ditto, back view.

Pompholyx.

At the conclusion of the address Dr. Wende was greeted with a great deal of applause. Dr. C. A. O'Dea showed a marked case of dermatitis exfoliativa of the malignant type. The subject had been so thoroughly handled by the speaker that there was no discussion, and, upon motion of Dr. G. S. Ray, Dr. Wende received the unanimous vote of the society and was elected an honorary member thereof.

The librarian, Dr. D. N. Dennis, rendered his annual report, and adopting his suggestion, the society voted an increased appropriation for the purchase of books for the ensuing year.

Drs. J. Howard Dasher and Augustus H. Roth were admitted to membership.

The committee appointed at the last session offered resolutions on the death of the late Dr. George A. Garries, which were unanimously adopted.

On account of the lecture by Dr. Wende, much of the routine business was deferred until a subsequent meeting for final action.

G. William Schlindwein, Reporter.

FAYETTE—January.

The regular meeting of the Fayette County Medical Society was held in Uniontown, January 1, 1907, at 1 p. m. Dr. J. P. Sangston was appointed to fill the chair. The members present were Drs. Altman, Patton, Crown, Detwiler, Ewing, Gaddis, Hackney, Luman, McKinney, Means, O'Neal, Robinson, Sangston, C. H. Smith, Sprowls, and Sturgeon.

The treasurer's report was given, showing a balance of $40.06.

A communication from the committee of the state society on inebriate hospital was read by the secretary, and he was instructed to urge the representatives of the state legislature to vote for such an institution.

The first paper was read by Dr. Levi Gaddis on "Medical Education and Laws of Pennsylvania" in which he drew comparison between the present and twenty-five years ago. Drs. Batton, Sturgeon, Ewing, Sprowls, and Sangston added interest to this paper by giving experiences relative to long years of practice, and all agreed that a national board of examiners should be appointed. The second paper was read by Dr. Lee M. Sprowls on "The Treatment of Burns," advocating the use of picric acid at first dressing. This paper was discussed by Drs. Batton and Smith. The third paper was read by Dr. F. C. Robinson on reminiscences of his sixty years of professional life.

The officers for the ensuing year were elected as follows: President, Dr. Lee M. Sprowls; vice-president, Dr. C. M. Luman; secretary and treasurer, Dr. J. S. Hackney; corresponding secretary and reporter, O. R. Altman.

Dr. Andrew O'Neil of Uniontown was elected a member.

A committee consisting of Drs. C. H. Smith, Gaddis, and Sprowls was appointed to select time and place for the annual banquet.

The society adjourned to meet at Brownsville on the first Tuesday in March.

O. R. Altman, Reporter.

FRANKLIN—January.

The annual and quarterly meeting was called to order in the Court Hall in Chambersburg, January 15, 1907, in the afternoon by Dr. McLaughlin. The following were present: Drs. Amberson, Coffman, Croft, Devilbiss, Devor, Gelwix, Kauffman, Kempter, McLaughlin, Miller, Palmer, Ramsey, Seibert, A. Barr and J. L. Snively, W. F. Skinner, Unger, White, and Zimmerman.

On account of the absence of the secretary at the beginning of the meeting, routine business was deferred.

The retiring president next read his address on "Tuberculosis." On motion of Dr. Ramsey a vote of thanks was accorded Dr. McLaughlin.

Upon motion the assistant secretary cast the ballot and the following were elected to the offices for the ensuing year: President, Dr. John W. Croft, Waynesboro; vice-presidents, Drs. Guy P. Asper, Chambersburg; and James H. Swan, St. Thomas; secretary, Dr. John J. Coffman, Scotland; assistant secretary, Dr. H. Clay Devilbiss, Chambersburg; treasurer, Dr. David Maclay, Chambersburg; censor, 1907-1909, Dr. Henry X. Bonebrake, Chambersburg; committee on public policy and legislation, Drs. David Maclay, Abraham H. Strickler, and Theodore H. Weagly.

Drs. John M. Gelwix, Chambersburg, and Guy L. Zimmerman, Lemasters, were elected to membership.

The minutes of the previous meeting were read and approved.

The committee on legislation failed to report.

Dr. J. J. Coffman, chairman of committee on inebriate hospital, reported a series of preambles and resolutions. These were adopted.

Committee on resolutions regarding life insurance examinations failed to report, but asked for expression from members. The committee was, upon motion, continued and asked to report at the next meeting. Dr. Amberson, the chairman, tendered his resignation, which was accepted. Dr. A. Barr Snively was named as the chairman in his stead.

A circular letter from the Carnegie Institution of Washington, regarding the circulation of the Index Medicus, was read by the secretary. On motion of Dr. A. Barr Snively it was directed that a subscription be entered for the society for one copy for 1907.

Dr. J. Burns Amberson, Waynesboro, was called upon and gave a practical talk on "Typhoid Fever." This drew out a discussion by Drs. Kempter, Snively, Miller, McLaughlin, Ramsey, Palmer and Unger.

Dr. D. F. Unger, Mercersburg, reported a case of cystic tumor complicating pregnancy. The tumor was removed by Drs. Palmer and Greenawalt at the home of the patient. The pregnancy continued to a successful termination at full term.

Society adjourned at 4:30 P. M.

John J. Coffman, Reporter.

HUNTINGDON—January.

The Huntingdon County Medical Society met at the Court House, Huntingdon, Thursday afternoon, January 10, with President J. C. Fleming in the chair. Those present were Drs. Bush, Campbell, Evans, Fleming, Frontz, Harman, Johnston, McClain, D. P. Miller, Moore, Myers, Schum, Sears, Simpson and Smith.

Dr. C. A. McCauley, formerly of Petersburg, resigned from the society and was granted a transfer card.

The society agreed to coöperate with the Medical Society of the State of Pennsylvania in asking the legislature to pass an act authorizing the establishment of a state hospital for inebriates.

The following officers were elected to to serve during 1907: President, Dr Charles A. R. McClain; vice-president, Dr. A. R. McCarthy; secretary and reporter, Dr. H. C. Frontz; treasurer, Dr. G. G. Harman; censors, Drs. R. Myers, Charles Campbell, and C. B. Bush.

Dr. H. R. Moore discussed "Pneumonia." He spoke especially of methods to prevent the disease.

Dr. J. C. Fleming, the retiring president, addressed the society. He spoke of the progress we are making as a society. He suggested a change of quarters for the meetings and advanced the idea of permanent quarters for the society. The newly elected president was then conducted to the chair by Dr. Charles Campbell, and spoke a few words of appreciation for the honor conferred.

The president appointed the following committees for the year: Committee on public policy and legislation, Drs. D. F. Miller, G. W. Simpson, and M. R. Evans; committee on program, Drs. W. H. Sears, H. C. Frontz, and J. M. Johnston.

H. C. Frontz, Reporter.

LAWRENCE—January, February.

The meeting of the Lawrence County Medical Society was called to order on January 3, 1907, at 1:30 p. m., at Hotel Henry, New Castle, by the president, J. R. Cooper. The following members were present: Drs. Cooper, Dean, Foster, Kissinger, Linville, McDowell, McKee, Miles, Popp, Redmond, Sankey, Tucker, R. and W. G. Wilson, and Zerner.

The several communications were read and disposed of.

Dr. Edwin S. Cooper was elected to membership.

The banquet committee reported that the banquet would be held January 17, at Fountain Inn and Dr. Crile of Cleveland would be the guest of honor.

The discussion on "Medical Legislation" was opened by Dr. F. C. McDowell. In his remarks he spoke of the need of a department of health in our Federal Government and a cabinet officer, the same as other departments, chiefly to conserve the health of the country and to obtain money for research work. He commented on our Pennsylvania Pure Food and Drug Act, and pointed out some of its defects. Also the need of the several states to enact laws to harmonize with the national laws. Some of the states had rather ideal legislation, such as Dakota in which the patent medicines were largely withdrawn from the trade. He thought we needed a more effective medical practice act, adding imprisonment to fine, and defining what constituted the practice of medicine. He referred to our need of a psychopathic ward in our general hospital for the detention of the temporarily insane patients, and a municipal hospital for the poor consumptives.

The subject was freely discussed by the members present.

The regular February meeting of the Lawrence County Medical Society was called at the office of Dr. Jesse R. Cooper, New Castle. After the usual preliminary business the communications relative to amending the medical practice act of 1893 were read, and Dr. McDowell, chairman of the committee on public policy and legislation, who had carefully read the proposed act, pointed out to the society wherein the proposed act differed from the present one.

The society, by motion, unanimously endorsed the proposed act, and referred the bill to the committee on public policy and legislation, to use their efforts in support of same.

A letter from Dr. Samuel G. Dixon was read, and the society drew up a resolution to resist any effort in the legislature to weaken or abolish the present vaccination act, a copy of this resolution to be sent to Hon. A. B. Hitchcock and Hon. D. P. Gerberich.

The name of Dr. Mitchell of Edenburg was proposed for membership.

A very interesting and instructive paper was read by Dr. Kissinger on "Medical Superstition," which was followed by a free discussion.

Dr. John B. Donaldson of Canonsburg, councilor for this district, was present and gave us an interesting talk and some valuable hints. He was asked to read a paper which he had with him, "The Doctor as a Business Man." The society tendered Dr. Donaldson a vote of thanks for his presence and paper.

On January 17, at the Fountain Inn, the Lawrence County Medical Society held its annual banquet. It was very largely attended by the members of our county and adjoining counties.

Dr. George Crile of Cleveland was the guest of honor and gave us a very interesting paper on "Immediate Transfusion of Blood."

Dr. Jesse R. Cooper, president, was toastmaster of the evening and introduced the following speakers who responded to toasts: Drs. Theodore Diller, W. S. Langfitt, and Edward R. Gregg from Pittsburg; Montgomery and Hauser of Youngstown, Ohio, and many members of our own society.

This was one of the most successful banquets ever held by the Lawrence County Medical Society, not only successful in a scientific way but was also instrumental in bringing together, socially, many physicians. B. E. Sankey, Reporter.

LANCASTER—February.

The regular monthly meeting of the Lancaster City and County Medical Society was held in Malta Temple, Lancaster, February 6, at 2 p. m., Dr. Geo. R. Rohrer, president, in the chair. Present: Drs. Appel, Atlee, Barsumian, Becker, Berntheizel, Blough, Breneman, M. L. and S. T. Davis, Day, Gerhard, Hartman, Helm, Hope, King, Kohler, Lehman, Leslie, McCaa, Markel, J. L. Mowery, Musser, Newpher, Reeder, J. P. and P. J. Roebuck, G. R. Rohrer, H. B. Roop, Shartle, Stahr, Stewart, Trabert, A. V. Walter, and Weidler.

The minutes of the preceding meeting were read and approved.

The committee appointed at the last meeting to draw up a fitting tribute to the memory of our late member, Dr. J. L. Zeigler, presented its report.

The president appointed the following committees: On increase of membership, Drs. J. L. Atlee, P. P. Breneman, L. M. Bryson, W. Giles Hess, J. P. Zeigler; on legal affairs, Drs. G. L. Cassel, T. M. Rohrer, A. V. Walter, R. M. Bolenius, J. R. Lehman; a subsidiary committee on legislation, Drs. F. G. Hartman, G. E. Day, P. J. Roebuck.

It was *Resolved*, That the members of the Lancaster City and County Medical Society reaffirm their complete confidence in the protective value of vaccination against smallpox, and respectfully urge upon the legislative bodies of the state to resist the efforts of those who would lessen the utility of the present vaccination law.

Dr. Donald McCaskey, Witmer, was elected a member.

Dr. S. T. Davis gave a very interesting talk on how primitive Mexicans make alcohol with a small copper kettle, two pole axes and two shovels, in Sonoro, old Mexico. Dr. Davis' talk was very interesting and his description of the method was much enjoyed. It was illustrated with an old copper kettle and a number of photographs.

Dr. W. B. Weidler read an interesting paper on "The Systematic Examination of the Eyes and Ears of School Children," and a vote of thanks was extended to him by the society. The paper was discussed by Drs. Rohrer and Roebuck.

Dr. T. B. Appel presented two specimens: (1) A tumor removed from the muscles of the thigh, highly vascular and difficult to remove; it proved on examination to be an adenocarcinoma. (2) A traumatic embolism of the mesentery, causing gangrene and perforation of the bowel.

Dr. Reeder showed a case of a young man who came in contact with a live wire; he was badly burned on the head and hands. A portion of the outer table of the skull, two inches in diameter, exfoliated. He is now apparently fully recovered.

The following were appointed a committee to arrange for the annual banquet of the society: Drs. Hartman, Lehman, Leslie, Breneman and Appel.

On motion the society adjourned.

Park P. Breneman, Reporter.

LEBANON—January, February.

A regular monthly meeting of the Lebanon County Medical Society was held on Tuesday afternoon, January 8, 1907, in the parlors of the Eagle Hotel, Lebanon, the members present being Drs. Grumbine, Guilford, Klein, J. J. and Seth Light, Maulfair, Rank and Weiss.

This being the first meeting of the year the annual election of officers took place with the following result: President, Dr. William M. Guilford; vice-presidents, Drs. A. S. Weiss and Seth Light; treasurer, Dr. W. F. Klein; secretary, Dr. C. M. Strickler; medical and surgical reporter, Dr. J. J. Light; reporter to PENNSYLVANIA MEDICAL JOURNAL, Dr. E. Grumbine.

Dr. Alfred S. Weiss brought before the meeting an interesting case of successful skin-grafting. The patient was a young man whose hand had been crushed in a railway accident in which all but the thumb and index finger were torn away, the latter being laid bare to the bone nearly its whole length on one side. With proper treatment the denuded side of the member was brought up by granulation, and a large number of skin grafts taken from the patient's thigh, every one of which grew, supplied the dermoid covering in the course of a few months. With the thumb and index finger the man has a tolerably good hand. Dr. Weiss was tendered a vote of thanks for the interesting clinical instruction his case afforded.

Dr. Guilford, the president elect, took the chair, and in his usual happy vein thanked the society for the honor. After the appointment of certain committees the meeting adjourned.

The regular monthly meeting of the Lebanon County Medical Society was held on February 12, in the parlors of the Eagle Hotel, Lebanon. Dr. William M. Guilford was in the chair and Dr. Charles M. Strickler acted as secretary. Members present were Drs. Beattie, Grumbine, Guilford, Klein, J. J. and Seth Light, Maulfair, Strickler and Weiss.

Dr. Seth Light gave interesting clinical lectures on two patients whom he brought before the society. The one was a case of partially developed "psoas abscess," operated on six weeks ago by Drs. John J. and Seth Light, who cut down into the cavity of the swelling in the patient's right side, letting out a large quantity of pus. The patient is still wearing a short drainage tube but is fast recovering his appetite, color and strength.

The other patient was a woman of fifty years suffering from progressive locomotor ataxia due to a constitutional taint. Prognosis unfavorable.

Dr. John Beattie's paper was an extremely interesting one on "General Paralysis." It was the complete history of a case of a wealthy high liver, from its inception to its fatal termination, and which at the autopsy was pronounced one of "advanced arteriosclerosis." Drs. Guilford, Klein, Beattie and Strickler took part in the discussion. Drs. Beattie and Light received a vote of thanks.

A program for the first half of the year was reported by Dr. Grumbine, the chairman of the committee. It provides for a paper and a clinic at every monthly meeting.

A resolution was offered and adopted asking the senator and representatives of Lebanon County to oppose the repeal of the vaccination law.

E. GRUMBINE, Reporter.

LEHIGH—JANUARY.

The annual meeting of the Lehigh County Medical Society was held at the Administration Building, Allentown, Tuesday, January 8, 1907, at 2 P. M., with the following members present: Drs. Bean, Boyer, Butz, Cawley, A. J. Erdman, Eshbach, Fetherolf, Guth, Hendricks, Kline, W. A. Riegel, F. C. Seiberling and Weaber.

Dr. W. B. Trexler of Fullerton, was elected a member.

The officers as reported by the nominating committee for the ensuing year, were duly elected; viz, President, N. C. E. Guth; vice-presidents, R. C. King and R. W. Young; secretary, J. Treichler Butz; treasurer, Albert J. Erdman; reporter, H. Herbert Herbst; censors, M. J. Backenstoe, C. J. Otto and W. A. Riegel; librarian, A. W. Hendricks.

The retiring president, A. W. Hendricks, delivered his annual address, which was exceedingly interesting, and its contents were well received.

The eleventh annual banquet was held at the American Hotel in the evening with the following present: Drs. M. J. Backenstoe, Bean, Boyer, Bleiler, Burke, Butz, Cawley, Dickenshied, A. J. and W. B. Erdman, Fetherolf, Fogel, Guth, W. H. and R. K. Hartzell, Hausman, Jr., Hendricks, Henry, Hertz, Horn, Hornbeck, Kline, Kress, McAvoy, Nagle, Otto, Pfleuger, Richards, H. H. and W. A. Riegel, Ritter, Schaeffer, Sheirer, F. C. Seiberling, T. H. Weaber, and Charles Haaf.

Dr. H. Y. Horn of Coplay, was toastmaster, and the following responded: "The Automobile and the Doctor," Dr. G. F. Seiberling; "Reminiscences of a Professional Life," Dr. P. O. Bleiler; "Medical Unity," Dr. Willard D. Kline; "Progress of Medicine," Dr. Charles D. Schaeffer; "Ideals of a Fledgling," Dr. C. J. Pfleuger.

H. Herbert Herbst, Reporter.

LUZERNE—January.

At a brief session of the Luzerne County Medical Society, held January 9, the following officers were elected for the year 1907: President, Dr. J. I. Roe; vice-presidents, Drs. H. P. Gibby and J. E. Schiefly; secretary and treasurer, Dr. Delbert Barney; historian and librarian, Dr. L. H. Taylor; editor, Dr. Maris Gibson; reporter, Dr. J. W. Geist; censors, Drs. Weaver, Whitney, and Gayley; executive committee, Drs. Edwards, Roderick, and Prevost; library and publication committee, Drs. Taylor, Gibson and Geist; committee on medicine and surgery, Drs. Mengel, Dougherty, and Wilcox; committee on public health, Drs. Ahlborn, Davis, and Tobias; auditing committee, Drs. Buckman and Matlack.

Secretary Barney stated that all dues are paid and the membership is 125.

Dr. J. W. Kerschner of Forty Fort was elected to membership.

A communication was read relative to the petition to the insurance companies to restore the old rate of medical examinations. A communication relative to the restriction of osteopathy was also read.

Dr. F. C. Johnson submitted the vital statistics of Wilkes-Barre for 1906.

The society then adjourned to the Wyoming Valley Hotel where about sixty of the members and their visiting medical friends sat down to the event-in-chief of the year. The flow of reminiscences, unusual experiences, and good stories, the ring of the old college songs, as well as the pleasure of things gastronomic were kept at their best by a liberal discourse of Oppenheim's orchestra.

The vice-president, Dr. Ross, presided as toast-master in the absence of the president, Dr. Longshore. At about 11 o'clock, Dr. W. L. Rodman, of Philadelphia, appeared and was received with most cordial greetings while the orchestra played "He's a jolly good fellow." Dr. Rodman later made a very interesting and instructive address on "Medical Legislation."

Dr. Guthrie analyzed "Why Men Succeed" by taking his ideal physician and showing the elements of his foundation and the sterling material of his superstructure.

Dr. Charles P. Stackhouse told what he personally knew of "The Doctor as a Student," and Dr. Weaver concluded with a series of indisputable proofs of the importance of "The Doctor as a Soldier" in fighting the "unseen foe" of all armies.

Other "overflow" speeches continued until the "wee sma' hours."

J. W. Geist, Reporter.

MIFFLIN—January.

The Mifflin County Society met at the office of its secretary, Dr. J. A. C. Clarkson, Lewistown, January 3, 1907.

After the disposal of general routine work, the officers for the ensuing year were elected as follows: President, Dr. H. W. Sweigart; vice-presidents, Drs. R. T. Barnett and S. H. Rothrock; secretary, Dr. J. A. C. Clarkson; treasurer, Dr. A. S. Harshberger; reporter, Dr. W. H. Parcels.

Dr. J. H. Hunter, the retiring president, read a carefully prepared address. A wish was expressed that this address might be published.

A resolution was passed that the members of our society should not make examinations for life insurance companies for a less fee than $5.00 if the insurance companies required a urinalysis. The amount of insurance taken by the policy holder has nothing to do with it. The doctor's work is just the same, no matter whether the policy is written for $1000 or $5000.

Dr. Clarkson read a paper on "Scarlet Fever." A free discussion of the papers read and of the cases reported, followed.

Our society has never been in such a flourishing condition as at present.

To Dr. and Mrs. Clarkson are due the memory of a delicious dinner, and for the hour and a half, during which we sat at the table, the pleasant conversation was literally "a feast of reason and a flow of soul."

The doctors had been requested to bring their wives, and many responded. Oh, yes, it is entirely possible to find an oasis in the desert life of the too busy physician.

Walter H. Parcels, Reporter.

MONTGOMERY—January.

The regular and annual meeting of the Montgomery County Medical Society was held January 2, at Charity Hospital, Norristown.

The retiring president, Dr. E. G. Krieble, took as the subject of his address "The Relation of Members of the Profession to Each Other and to the Community," and gave an interesting and practical paper upon that subject.

The treasurer, Dr. S. N. Wiley, made his report, showing a balance of $191.90 in the treasury. $100.00 of this amount was voted into the permanent fund of the society, which has for its object the purchase of a building for its use some day in the future. The permanent fund amounts to $562.00.

The election of officers followed, resulting as follows: President, Dr. Oliver C. Heffner; vice-presidents, Drs. William G. Miller and George W. Stein; secretary, Dr. H. H. Whitcomb; corresponding secretary and reporter, Dr. Edgar S. Buyers; treasurer, Dr. Frank C. Parker; censors, Drs. J. N. Hunsberger, W. McKenzie and H. F. Slifer; district censor, Dr. William McKenzie; delegate to Council, Dr. P. Y. Eisenberg; alternates, Drs. H. A. Bostock and F. B. Allen; committee on public policy and legislation, Drs. P. Y. Eisenberg, J. N. Hunsberger and George T. Lukens.

The president elect, Dr. O. C. Heffner, was conducted to the chair, and he acknowledged the honor conferred upon him.

A committee, consisting of Drs. J. K. Weaver, J. N. Hunsberger and E. G. Krieble, was appointed to prepare the program for the ensuing year.

A committee, consisting of Drs. C. Z. Weber, C. H. Mann and F. C. Parker, was appointed to provide for the annual banquet to take place at the Hamilton, January 23.

Twenty-one members were present and a marked interest in the proceedings was apparent. J. K. Weaver, Reporter.

PHILADELPHIA—January 9.

A stated meeting of the Philadelphia County Medical Society was held Wednesday, January 9, 1907, at 8:30 p. m., the president, Dr. Charles K. Mills, in the chair.

The papers read at this meeting comprised a symposium on "Röntgen Diagnosis and Therapy."

Dr. Henry Hulst of Grand Rapids, Michigan, presented a paper on "Röntgen Diagnosis in Gastric and Intestinal Disease" which was illustrated by Röntgenograms. The tendency in Röntgen-ray diagnosis has been away from the screen and toward the plate. Both methods, however, have their peculiar advantages, the screen for general orientation and motion, the plate for detail and permanent record. Bismuth is needed, but the aim should be to use no more than suffices for the purposes of the examination. Some conclusions drawn from negatives shown by Dr. Hulst were that if respiration does not, position does exert a marked influence upon the location of the stomach and intestines.

The greater the ptosis the more pronounced the effect. The diaphragm is notably higher on the side on which the person examined lies and diaphragmatic breathing is greatly in excess to the other side.

The horizontal position permits the heart, diaphragm, stomach and colon to ascend.

The horizontal dorsal position causes the stomach also to gravitate toward the fundus. This position tends to replace the prolapsed stomach.

Examination for gastroptosis in the recumbent dorsal position is therefore misleading.

To bring out the existing ptosis it is necessary to put the patient in a sitting or standing position.

Pressure against the hypogastrium pushes the stomach upward; to a less extent, the diaphragm and heart also.

Voluntary retraction of the lower abdomen produces a like result and is attended moreover by a reflex enlargement of the lower thoracic aperture.

This is the exact reverse of what takes place in enteroptosis, in which the diaphragm descends together with the other organs and the lower thoracic aperture diminishes in size.

This suggests the existence of a definite relation between the shape of the body and the position of the internal organs. The Becker-Lenhoff index is but one tentative expression of this relation. In proportion as people are well built their stomach approaches a certain type. Dr. Hulst asserts that good figures are rare, especially among women, and that normal stomachs must therefore be rare also. The more of a Venus a woman, the more of an Apollo a man, the more perfectly their stomachs correspond with the normal type; but the author feels that the line is instinctively drawn at enteroptotic Venuses and gastroptotic Apollos.

Dr. E. W. Caldwell of New York City in a paper on "Some Suggestions Concerning the Use of Röntgen Rays in Diagnosis," made the statement that all Röntgen ray examinations are made by means of shadows which are obtained by interposing the object examined between a source of rays and a fluorescent screen or a photographic plate. Dr. Hickey's definition of a skiagraph was quoted as, "A record of density, produced by the Röntgen rays, and made in accord with the laws of projection." It is evident that no one can be safely trusted to interpret a skiagraph until he has learned to regard it not as a view, but as a projection, and to be constantly on his guard against erroneous impressions of perspective. This tendency to consider the skiagraph or so-called x-ray photograph as a photographic view has led to much of the dissatisfaction with the x-ray and sometimes caused its veracity to be called in question. The x-ray, it is claimed, does not lie, but one who incorrectly interprets its shadows may be mistaken. Considering the skiagraph as a projection and not as a view, the absurdity of the requests for side views of shoulders and hip joints, familiar to every Röntgen ray worker, is apparent. Transverse projections of these parts superimpose the shadows of both sides as well as everything between, and the rays must pass through the body in its long diameter. Such projections are, therefore, in most cases, useless.

With all their imperfections, stereoscopic Röntgen projections are extremely valuable in many cases; and, in spite of the difficulty of technic, they must come into more general use. Since in Röntgen work nothing is gained by the print, he thinks it better to use the glass plate and void the loss of detail incident to the transfer to printing paper. Whether plate or print is used, it must be remembered that the shadows of similar objects are similar in color. Reference was made to the skiagraph of a supposed vesical calculus, the shadow of which, however, was dark and due to gas trapped in the rectum. The great importance of having x-ray work done only by those thoroughly skilled was strongly emphasized, and the paper closed with an exhibition of skiagraphs illustrating the value of x-rays in diagnosis.

Dr. Henry K. Pancoast opened the discussion, exhibiting skiagraphs, with explanatory statements, included under the practical application of x-ray examinations by the bismuth method in various conditions of the gastrointestinal tract and esophagus, diseases of the accessory sinuses, and tumors of the brain and head.

Dr. Charles Lester Leonard said that the practitioner should demand the employment of the Röntgen method of diagnosis by a Röntgenologist whose ability and experience fit him to make diagnoses by its aid which the practitioner himself can not make. He should demand not only a technic in handling apparatus and in making an accurate Röntgenogram but also an experience and an education in this particular method of diagnosis above his own that fits the diagnostician to render a more valuable diagnosis than the practitioner can make with the same data. Anatomy viewed from the Röntgenogram is entirely different in its expression from any other view. Pathological anatomy is likewise very different and its interpretation demands an experience and study that can only be secured by those devoting time to it. Dr. Leonard observed that he had seen a sesamoid bone in the flexer longus pollicis described in the *British Medical Journal* by a prominent London surgeon as an exostosis, and the shadow of the patella called an ossifying osteitis by a member of the American Surgical Association. Such mistakes should now be impossible to a tyro in Röntgenology. In closing, Dr. Leonard quoted Sir William Bennett, in an article in the *British Medical Journal* of December 8, 1906, as saying that "the first essential in all cases of sprain is to determine whether fracture coexists, which can readily be done by the x-rays when they are available; it should, indeed, be an accepted practice that, when possible, every sprain, especially those near joints, should be examined by the x-rays. In the event of the x-rays being unobtainable, it is wise to regard any case in which the symptoms of sprain near a joint are unduly exaggerated as being complicated by fracture, especially if the parts concerned be the phalanges of the fingers or the metacarpal region. . . . The frequent overlooking of bone lesions in so-called sprains seems to be greatly due to the fixed idea on the part of many people that crepitus is a necessary symptom of fracture, and that absence of crepitus means absence of fracture, a sadly mistaken belief, inasmuch as, it need hardly be said, fracture often occurs in circumstances in which the detection of crepitus is impossible. On the other hand, crepitus after injury, especially if near a joint, may be elicited when no fracture is present. I have seen several cases of injury near joints in which fracture has been either diagnosed or strongly suspected on the strength of crepitus resulting from osteoarthritis in the adjacent articulation.''

Dr. Mihran K. Kassabian exhibited a large number of lantern slides. In the majority of these cases, diagnosis by the *x*-rays was the only means of differentiating rare, obscure and simulating conditions, such as fractures, epiphyseal separations and displacements from dislocations. Other slides depicted osseous diseases (osteitis and periostitis), tumors of the bones, detachments of the ligaments and muscles, diseases of the joints, congenital dislocation of the hip joint, etc. A number of slides exhibited tumors of the trachea and of the vocal cords; while several more showed pulmonary tuberculosis and aneurisms of the heart and aorta. A slide was shown depicting aneurism of the innominate artery which was confirmed at autopsy. A case of streptothrix was differentiated from tuberculosis by the skiagraph and later microscopically.

Dr. Russell H. Boggs of Pittsburg, in a paper on ''Some Applications of the Röntgen Rays in Dermatology,'' made a plea for more conservative use of the Röntgen rays in dermatology. In order to apply the rays successfully he said the operator must be able to decide whether Röntgen treatment is the best method available, and then be able to give the dosage necessary to produce the desired physiological action. He suggests that if every operator would first learn the action of the rays by making radiographs of the more difficult portions of the body, results would be more uniform. As the rays are only indicated in certain lesions and should not be employed in a routine manner, each case should be carefully studied and then the method decided upon.

In the treatment of chronic eczema, stubborn cases of acne, psoriasis, keloid and lupus vulgaris, Dr. Boggs has found the Röntgen method efficient. As an epilatory agent the method is superior to any other in the treatment of parasitic diseases, such as favus and tinea, sycosis and blepharitis. Considering the large amount of ringworm and favus among the schoolchildren in the poorer districts and the failure of prophylactic measures to prevent their spread, it seems to the author almost imperative that these cases have *x*-ray treatment by an experienced operator. The danger is pointed out of having the rays applied by resident physicians, nurses, or engineers.

''Radiotherapy in the Treatment of Malignancy'': Dr. George C. Johnston of Pittsburg considers malignancy in the abstract as a condition of cell anarchy, expressing thereby the total disregard of the individual cells for physiological law. This disregard is shown by the invasion of new territory and by remarkable multiplication. These new cell formations possess low resistance and poor reparative power, and when exposed to a dose of *x*-ray, which in normal tissue would produce but transitory irritation, they undergo tissue death. The author shows that in the treatment of internal growths failure frequently occurs because, in spite of every device, an undesirable surface effect is produced before the deepest portions of the growth have received sufficient *x*-ray. There is pointed out the constantly successful results of superficial malignant conditions in qualified hands and here the greatest value of the ray is shown in those conditions less favorable for successful surgical removal, such as epitheliomata in and about the alæ of the nose, on and about the eyelids, and about the eyes. It is stated that the treatment of carcinoma in the hands of certain operators has cast much discredit upon the method, hundreds of absolutely unsuitable cases having been submitted to *x*-ray by inexperienced physicians. While he claims it as true that many primary circumscribed carcinomata have been successfully treated by *x*-ray alone, yet he regards the wisdom of such treatment doubtful, believing it better to combine surgery and *x*-ray, submitting the patient to a series of ante-operative radiations followed by extirpation of all infected tissue, and this again followed by a series of postoperative radiations. The objections that have been advanced to ante-operative radiations he states are theoretical only and believes that an experienced surgeon will find no difficulty in operating on a patient who has been exposed to *x*-ray.

Dr. G. E. Pfahler opened the discussion upon the papers of Drs. Boggs and Johnston, showing rapidly lantern slides of about forty-five cases, the most remarkable among which was a case of very malignant sarcoma involving the soft tissues at the angle of the jaw in a young man of twenty years. The tumor developed to the size of an "apple" in three weeks when it was removed surgically. In three weeks it had again developed to its original size and was again removed surgically. On the fifth day after the second operation a photograph was taken when the tumor had recurred and had reached the size of a hen's egg. He was then placed under very active *x*-ray treatment and after twenty treatments and two months' time it had entirely disappeared and he is still well a year later, as was shown by a second photograph. With Dr. Boggs he believes the *x*-ray to be a most powerful therapeutic agent, but that as much skill is needed in its application as in any other special field of medicine, good results depending upon good technic.

Dr. Jay F. Schamberg said that the effect of the Röntgen rays upon tissues varies according to the intensity of the irradiations. The following effects were detailed:—

1. The earliest effect is local stimulation or an enhancement of the vitality of the tissue. The rays doubtless alter cellular chemistry by the influence of electrified ions upon protoplasm. In the treatment of skin diseases, the cutaneous tissues are reinforced against bacterial invasion and are likewise strengthened against pathological influences from within. It is upon such grounds that the favorable action in eczema and certain other inflammatory diseases may be explained.

2. A further effect of the *x*-rays is to produce atrophy of the more highly specialized elements of the skin. This action is utilized in the treatment of acne, sycosis, hypertrichosis, excessive sweating, etc. In acne the rays are the most important therapeutic measures. The best results, however, are obtained when no single method of treatment is exclusively relied upon. It was pointed out that some cases require dietary and internal treatment as well as local measures. An important part of the treatment in many cases is the systematic expression of the blackheads or sebaceous plugs in the follicular ducts.

3. The *x*-rays, if used sufficiently long or strong, cause a degeneration of the cells resulting in necrosis.

4. The *x*-rays exert an analgesic influence upon the skin and frequently relieve itching.

5. The *x*-rays are also valuable in producing depilation and the extrusion of fungus and thereby exert a curative effect in such cases as ringworm and favus of the scalp.

In quite an extensive experience Dr. Schamberg has never observed toxemia to result from *x*-ray treatment despite the fact that a number of his patients have had gout and others damaged kidneys. It is to be remarked, however, that his treatments have been directed towards superficial conditions and have not, as a rule, been intended to produce tissue necrosis.

R. Max Goepp, Reporter.

SCHUYLKILL—January.

The Schuylkill County Society held its annual meeting in Washington Hall, Ashland, January 8, 1907. The meeting was called to order by the president, Dr. J. L. Hoffman, at 3 p. m. Members in attendance were Drs. Bartho, Bowman, Bryson, Corson, Fleming, Halberstadt, Hoffman, Moore, Ressler, Santee, Shifferstine, Spalding, Wasley, and Williams.

The minutes were read and approved. A communication from Dr. J. N. McCormack in reference to the report of the Committee on Insurance of the American Medical Association and President Mayo's letter of transmittal was read, as was also a communication from Dr. Ellenberger, secretary of the Committee on Inebriate Hospital of the state medical society in reference to obtaining the influence of this society in accomplishing the erection of a state hospital for inebriates. The action of the society upon these matters was deferred until a subsequent meeting.

Dr. G. W. Ressler presented the application of Dr. R. A. Constien of Ashland for admission as a member into this society, and the same was referred to the Board of Censors for its action.

The secretary's annual report was read and upon motion the same was accepted as follows:—

At the beginning of the year the membership numbered sixty-two. A large proportion of these were delinquent in dues for one or two years and after the adoption of the new constitution the society decided to have the provision regulating the payment of dues strictly executed, which made it necessary, after due notice, to suspend nine members. The society also lost two old and respected members by death, Drs. C. W. J. Smith and G. F. Brendle, and one by resignation, Dr. L. A. Flexer.

Ten new names were added to the roll of members during the year, as follows:

Drs. G. R. S. Corson, J. B. Rogers, and L. T. Kennedy, Pottsville; J. F. Bryson and W. J. Monaghan, Girardville; E. E. Shifferstine, Tamaqua; H. M. Wasley and W. J. Winters, Shenandoah; J. K. Berk, Frackville; J. M. Gwinner, Centralia, thus giving a membership of sixty.

It is principally due to the persistent and untiring efforts of our president that we can report such a phenomenal gain in membership.

There were eleven meetings held during the year of which seven took place at Pottsville and one each in Frackville, Girardville, Mahanoy City, and Shenandoah. The meetings were attended by an average of eleven members. The largest attendance during the year was at the meeting held at Pottsville Hospital, March 13, with twenty-three members. The smallest, with only five members, was in Bergeman Hall, Pottsville, April 3. The attendance is far below what it should be and an earnest effort should be made to increase it.

The following scientific work was transacted during the year:—

February meeting, paper, "The Care of Our Insane," Dr. G. H. Moore; March meeting, surgical clinic, Pottsville Hospital, Dr. Joseph Price; May meeting, paper, "Ectopic Gestation," Dr. A. H. Halberstadt; July meeting, paper, "First Aid to the Injured as Taught the Employes of P. & R. C. & I. Co., Dr. G. H. Halberstadt; August meeting, paper, "The Physicians and Specialist's Relations to Each Other and Their Brethren," Dr. G. H. Moore; October meeting, paper, "The Citizen Physician," Dr. A. B. Fleming; December meeting, paper, "Infant Feeding," Dr. G. O. O. Santee.

It will be observed that only seven of eleven meetings had any scientific work, which fact is to be deplored, yet no one knows as well as the president and secretary, the difficulties and excuses encountered in trying to arrange the scientific program for the meetings. This should not be so, and I earnestly recommend that particular steps be taken to have a prearranged and suitable scientific program for each meeting, as this would unquestionably enhance the welfare of the society in many ways.

Every member belonging to the society at this date is in good standing and has paid his dues to January 1, 1907. It is encouraging to start a new year without a single delinquent and I sincerely hope the same may be said one year hence.

The amount of $249.25 was collected during the year as initiation fees, dues for the year, and delinquent dues. This is an unusual showing for the society and bespeaks, I trust, a brighter future than the past has been.

It is interesting to note that during the year three annual assessments amounting to $278.50 were paid the state treasurer for dues of 1905, '06, '07, and we are again in good standing in The Medical Society of the State of Pennsylvania.

Trusting that these statements may incite greater effort and better work in the future, I respectfully submit this report.

G. O. O. Santee, Secretary.

The society's vote of thanks was tendered the secretary for his work during the year.

The election of officers for the ensuing year was announced and Dr. J. L. Hoffman withdrew his name as a candidate for reelection to the presidency, whereupon the following officers were regularly elected by ballot: President, Dr. G. H. Moore; vice-president, Dr. A. B. Fleming; secretary and reporter, Dr. G. O. O. Santee; treasurer, Dr. David Taggart; censor, Dr. J. Spencer Callen.

After the transaction of financial business the society adjourned to meet at Pottsville, February 5, and the members in attendance repaired to Pelstring's Café as the guests of the retiring president, Dr. J. L. Hoffman, where a sumptuous dinner was served. The customary after-dinner wit and wisdom flowed in a most happy vein and helped to make the occasion one of lasting memory.

G. O. O. Santee, Reporter.

SOMERSET—January.

The Somerset County Medical Society held its first session of 1907, in Meyersdale on January 15, with one third of the members present. There was an unusual amount of correspondence to be considered regarding soliciting contributions for a memorial to Dr. N. S. Davis, the appointment of examiner of patients to the free hospital for poor consumptives, the establishment of a state hospital for inebriates, the fee for examining applicants for life insurance, the compulsory vaccination law, and some others of minor importance.

Dr. C. P. Large, president elect, delivered an address in which he thanked the society for the honor conferred. He said he would try to do his duty and asked the assistance of the society. He said the social and educational features were very great and he hoped that the membership would take advantage of them during this year, and that each member would consider it his duty to secure at least one new member during the year. He also thinks we should devise means by which we can have longer sessions or more of them, as we have too little time for the reading and discussion of papers.

Dr. Stayer read a paper on "Asthma." He said he did so more to obtain than to impart information on the subject, as he is himself a sufferer from it. He wanted to know the cause and treatment for this distressing disease. The little time remaining was devoted to talk on the subject: the why and wherefore, the physical, dietetic and climatic causes, etc. The conclusion was reached that it is not a disease but a symptom of disease, reflex. For immediate relief emetics, narcotics, nervines, were recommended; take your choice to suit your case. Adrenalin chlorid is mostly favored but should be used judiciously. For permanent relief, find the cause and remove it.

The next meeting will be held at Meyersdale on April 16, when arrangements will be made for longer sessions. All physicians will be welcome.

H. C. McKinley, Reporter.

SUSQUEHANNA—February.

The Susquehanna County Medical Society held its second quarterly meeting at the Arlington Hotel, in Hallstead, Tuesday, February 5. The weather was severe and the attendance smaller than usual, the members present being Drs. Birdsall, Grander, Halsey, Peek, and Schoonmaker, C. L. Stiles, of Owego, an honorary member, and J. D. Kelly, D. D. S., of Susquehanna.

At one o'clock the society enjoyed an excellent dinner which was a credit to our host.

Dr. Clayton Washburn, the president, called the society to order and the meeting was opened with prayer by Rev. A. B. Herr of the Presbyterian church. Dr. Gardner, the secretary, was absent and Dr. Halsey was called to act in that capacity.

Dr. Birdsall, on behalf of the committee appointed at the last meeting, presented the following resolutions which were unanimously adopted:—

Whereas, The legislature of Pennsylvania, at its session in 1905, enacted a law, entitled "An Act to Preserve the Purity of the Waters of the State, for the Protection of the Public Health." Act No. 182, page 260 of the Laws of Pennsylvania.

This bill provides that corporations or municipalities supplying or intending to supply water for towns, cities, etc., shall report to the commissioner of health their plans, etc., in detail.

This part of the law commends itself to the good judgment of every one interested in the public welfare.

Section Four of this law prohibits cities, towns, corporations and individuals from using any river, stream or other body of water as an outlet for sewers.

Whereas, The rivers and various streams of running water are the natural sewers of the country, and

Whereas, A thorough system of sewerage is essential to the sanitary welfare of every city and borough of any considerable size and ought to receive all possible encouragement from favoring legislative enactments, and

Whereas, It is impossible to keep the water of rivers flowing long distances through thickly populated districts free from pollution, and

Whereas, The water supply for cities and towns should not be sought from such streams, but from elevated regions, where, by special effort, the municipality or corporation having charge of the water supply may remove, or prevent, any source of water contamination, and

Whereas, The public health of any community is jeopardized far more by inadequate sewerage than by allowing the sewage to flow where the law of gravitation carries it,—to the nearby river, and

Whereas, This provision of Section Four is a great injustice to the smaller towns of our state, not only discouraging sewerage, but in many cases rendering it prohibitive, on account of the heavy expense entailed by any of the present methods of sewage destruction, therefore be it

Resolved, That it is the opinion of the Susquehanna County Medical Society that Section Four of the law herein referred to should be repealed, and all parts of this law, and of any other laws inconsistent with the repeal of this said fourth section, should also be repealed.

Resolved, That a copy of these resolutions be forwarded to our state senator, Hon. Robert S. Edmiston, and to our representative, Hon. E. E. Jones.

An appeal of the Philadelphia County Medical Society in regard to vaccination was discussed and sustained, and those representing us in the legislature are asked to support the measure.

Dr. Schoonmaker read an able paper on the "Present Treatment of Tuberculosis," which was generally discussed.

J. D. Kelly, D. D. S., read an interesting paper on "Saliva" which elicited applause and thanks.

Part of the program was omitted owing to the absence of those to whom papers had been assigned. The time was well occupied until most of the members were obliged to leave for their homeward trains. After a very pleasant session the society adjourned to the annual meeting at Montrose on the first Tuesday of May.

Calvin C. Halsey, Reporter.

WARREN—January.

At the annual meeting of the Warren County Medical Society, held in Warren, January 15, the secretary reported that eleven meetings had been held during the year, the July meeting having been omitted to give place to that of the Northwestern Medical Society. As there was not a quorum at the stated meeting in November, a second meeting was called at the State Hospital.

The schedule prepared by the program committee has been followed quite closely. Six of the physicians who were on the program for papers met their appointments to the relief of the secretary and with interest and benefit to the society. Some who could not do so gave notice in time so that another program could be prepared. Many different members kindly responded with reports of clinical cases.

Three new members have joined the society since the last annual meeting; one member has removed from the county, leaving a present membership of forty.

The average attendance at the meetings has been twelve.

During the year the society has adopted a new and modern constitution.

All important letters have been read to the society and no correspondence has been consciously neglected.

Mary C. Conant, Reporter.

Necrology.

In Memoriam—Howard M. Griffee, M. D.

(The following resolutions were adopted at the meeting of the Bucks County Medical Society, November 14, 1906.)

Whereas, It has pleased Almighty God in His wisdom to remove from our midst our esteemed fellow physician, Dr. Howard M. Griffee of Taylorsville, we feel deeply the loss sustained by this society. Therefore be it

Resolved, That the society has lost one of its honored and upright members, and bears testimony of his character and uncomplaining spirit with which he bore his long illness.

Resolved, That we extend our regrets and sympathy to the widow; that these resolutions be spread upon the minutes and a copy be sent to Mrs. Griffee.

John A. Crewitt.
James N. Richards.

In Memoriam—Frank P. Grove, M. D.

(The following resolutions were adopted at the special meeting of the Huntingdon County Medical Society, August 21, 1906.)

Whereas, It is with deep sorrow and regret that we, the members of the Huntingdon County Medical Society, learn of the untimely death of our friend, member, and fellow practitioner, which took place at his home in Alexandria on Monday, August 20, 1906, therefore, be it

Resolved, That we hereby express to his friends and relatives, especially his surviving young daughter, Helen, our sorrow, and also offer them our heartfelt sympathy in this time of bereavement.

Resolved, That the above be transcribed upon the book of minutes and transactions of our county society.

Resolved, That a copy of these resolutions be sent to his daughter and brother and to each of the Huntingdon papers for publication.

W. H. Sears,
A. B. Brumbaugh,
R. Myers,
J. M. Beck,
M. R. Evans,
Committee.

In Memoriam—George C. Borst, M. D.

(The following resolutions were adopted at the meeting of the Cumberland County Medical Society, January 8, 1907.)

Whereas, In his inscrutable wisdom an all wise Providence has seen fit to take unto himself our late colleague, Dr. George C. Borst of Newville, be it

Resolved, That the Cumberland County Medical Society receives this news with profound regret and a deep sense of the loss which it has suffered in his untimely demise. A man of amiable disposition and lofty character, his ideals were ever high and noble. As a man he was a worthy and estimable citizen; as a physician he was skillful, energetic and able; as a friend he was sincere and true; and as a companion he was congenial and faithful; as an active member and former president of this society he was always actively interested in the advancement and progress of medical science in Cumberland County. Whatever honors the society had to bestow were freely accorded him during his life, and now that he has passed over the confines of eternity into that bourne whence no traveler returns, his bereaved associates pause to pay a tribute of sincere affection to his memory.

Resolved, That the heartfelt sympathy of the Cumberland County Medical Society is extended to the bereaved family of our deceased fellow member, that a committee be appointed to be present at his obsequies, that a floral memorial be provided to rest upon his casket, and that these resolutions be engrossed upon the records of the society and furnished for publication to the press of Carlisle and Newville.

In Memoriam—Jerome Z. Gerhard, M. D.

(The following resolution was adopted by the Dauphin County Medical Society at its meeting held at the Harrisburg Academy of Medicine, November 20, 1906.)

It is with profound sorrow that we chronicle the death of one of our number who was long identified with this society as one of its most honored members, Jerome Z. Gerhard, M. D.

Therefore we deem it fitting to pay tribute to his high character, and accord due recognition of his services to the profession of medicine and his efforts in aiding the building up of this society.

We note with pride that for twenty years he served this state in the treatment of its insane in the hospital in this city. Not only was his standing of the highest as a physician, but as a citizen and in his church and business relations his help and counsel will be greatly missed.

We mourn his loss, and therefore, be it

Resolved, That we attend his funeral in a body, that a record of these proceedings be kept in the minutes and a copy be sent to the family of the deceased.

William H. Seibert.
Hiram McGowan,
E. H. James,
Committee.

Dr. Gerhard's death was due to congestion of the brain, resulting from exposure to inclement weather two weeks before.

He was born in Cherryville, Northampton County, November 6, 1842. He prepared for college in the Lancaster High School and the preparatory department of the Franklin and Marshall College, and was graduated from this college in 1864. During the same year he began the study of medicine in the office of Dr. John L. Atlee. On March 2, 1865, he enlisted as a private in Company K, 195 Pennsylvania Volunteer Infantry, and served in the army of the Shenandoah, chiefly as acting division hospital steward. He was honorably discharged January 31, 1866. He was graduated from the University of Pennsylvania with the degree of M. D., March 13, 1868.

February 1, 1870, he became first assistant physician in the State Lunatic Hospital, Harrisburg. He held this position until February 14, 1882, when he succeeded Dr. John Curwin as superintendent and physician in chief, which position he held for over ten years.

Dr. Gerhard was a member of the Dauphin County Medical Society, of which he had served as president, and of the Harrisburg Academy of Medicine, of which he was a charter member and in which he had held the offices of trustee, treasurer, vice-president, and president. He was also a member of the Medical Society of the State of Pennsylvania, of the American Medical Association, and of the American Academy of Medicine.

(The following memorial note was adopted by the Harrisburg Academy of Medicine.)

Inasmuch as Jerome Z. Gerhard, A. M., M. D., has finished his earthly career, we, his associates in the Academy of Medicine, desire to record our appreciation of his work and character.

Quiet and unobtrusive, he was faithful and efficient in the performance of his professional duties. He was a charter member of the Academy, to which he contributed freely of his time and money. By papers and in discussions, he gave us the benefit of his skill and knowledge which we testify were very valuable, especially in the field of neurology.

The Academy acknowledged his worth to us by electing him to its highest offices. He was chosen as trustee, as treasurer, and as president. In all of his relations to the association, he was faithful and loyal.

In his relations to the community, he was ever ready to respond to a call for service. In his youth, he served as a soldier in the Civil War, thereby earning a place among those whom we honor as the Grand Army. Later he served the state efficiently as assistant superintendent, and as superintendent of the Hospital for the Insane, making an enviable reputation, which is known far beyond the borders of our own commonwealth.

In every effort of this society to improve the health of the city, whether we sought to eradicate existing diseases, or to prevent others from entering, he did his part.

As an alienist, he frequently served the courts, and still more frequently, he helped his colleagues as a trusted consultant.

In addition to the foregoing channels of usefulness, he found time to serve as a church officer, a Sunday school worker, a manager of the Bethany Orphans Home, and in other church activities. He was also a director of the Harrisburg Antituberculosis Society.

The profession has lost a physician of marked ability, and the community a citizen of exceptionally high character.

F. W. Coover.
J. W. Ellenberger.
J. Walter Park.

In Memoriam—George A. Garries, M. D.

(The following memorial note was adopted at the February meeting of the Erie County Medical Society.)

Died, in Erie, at his late residence, Tuesday, December 25, 1906, Dr. George A. Garries, aged 60 years. Dr. Garries was born in Bavaria, Germany, in 1846. He came to America when he was eight years old. At the age of seventeen he enlisted to serve the country of his adoption in the Civil War, and was terribly wounded in the battle of Spottsylvania Court House. Afterward he was a member of the Veteran Corps and continued in provost duty until the end of the war. He prosecuted his literary education at St. Vincent's College for three terms and afterward entered the medical college, where he was graduated in 1881.

By the death of our colleague, Dr. Garries, the Eric County Medical Society loses a faithful member of many years' standing, who was conscientious in his work and upright and sympathetic in his relations with his brother practitioners; this community loses an able citizen and a capable, loving physician; the country loses a valiant soldier, who, while still a boy, responded to Lincoln's call for defenders of this, his adopted country. And it is hereby resolved that we express our sympathy with the bereaved family and our appreciation of his worth as a physician, a man, and a citizen.

George B. Kalb.
Ira J. Dunn.
John W. Schmelter.

In Memoriam—William H. Dingee, M. D.

(The following resolution was adopted by the Medico-Legal Society of Philadelphia.)

Whereas, The members of the Medico-Legal Society of Philadelphia, learn with sorrow the death of Dr. William H. Dingee, one time member of this society, and during the year 1901 chairman of the Committee on Entertainment, and who was one of several that led this society to confine its work exclusively to medico-legal matters.

Whereas, In his professional life he was honest and sincere, ever showing a loyal devotion to the ethical code; and, as far as the poor state of his health would permit, he labored earnestly to create and maintain a similar loftiness for it among his fellows.

Resolved, That in his death the profession has lost an upright citizen, a faithful, ethical and beloved physician. We tender his family our profound sympathy in their bereavement.

W. T. Hamilton, Secretary.

In Memoriam—Jacob L. Zeigler, M. D.

(The following memorial note was read at the February meeting of the Lancaster City and County Medical Society.)

The committee appointed to draw up a fitting tribute to the memory of Dr. Jacob L. Zeigler, long a member of this society, who died December 26, 1906, presents the following for record, not so much for the present membership, for his position in the medical circles of Lancaster County and of the state was such that no words of ours could add to his reputation, but as a matter of history for the benefit of those who follow us.

Jacob Lindemuth Zeigler was born in East Donegal Township, November 17, 1822, the son of Jacob Zeigler, a farmer of old Lancaster County stock. He lived on the farm, receiving such early education as the district schools of those days provided, until he was thirteen, when he entered Rev. Simpson's institute at Marietta, and later attended John Beck's Academy at Lititz, and the Mount Joy institute. He taught school one year and then entered the office of Dr. Nathaniel Watson of Donegal Springs as a student of medicine in 1840. He attended lectures at Jefferson Medical College, graduating there in the class of 1844, and in August of that year opened an office in Mount Joy, where he practiced until his death. He became a member of the Lancaster City and County Medical Society, August 23, 1848, and his continuous membership of fifty-eight years marks a record that we believe can not be equaled in the state or nation. He was a conscientious member, attending the meetings with great regularity, taking part in the discussions, and participating in the business. His interest and ability were recognized by the local society by the election to the presidency in 1865 and again in 1879, the society paying him the unusual honor of electing him for a second time. He became a member of the Medical Society of the State of Pennsylvania in 1865, and was made president of that body in 1881. At the time of his death he was the oldest living ex-president of that society. He shared the honor of being chosen to the highest position in the gift of the medical profession of Pennsylvania with three other members of this society,—Humes, Atlee, and Craig. Naturally, with his love for medical organization, he early became a member of the American Medical Association, and later of the Pathological Society of Philadelphia. When the Columbia College of Physicians and Surgeons was organized, he was the natural choice for the presidency and held that position until his death, having been reëlected for the thirteenth time, in December, 1906.

The practice of medicine was his life, and his strong, rugged constitution enabled him to withstand the exposure and wear and tear of over sixty years, with a record of only two days confinement to his office throughout his entire professional career. He kept himself well abreast of modern professional advances, and for years has been emphatically the dean of the profession in this county. His ideas of professional etiquette were of the highest order, and his tolerance of quackery, subterfuge, and professional trickery are too well known to require more than a passing note. Through his professional life he was a most able practitioner of his chosen profession, strong in his opinions, a good friend, and a good fighter.

When the war broke out, a man of his ideas and attributes could not forego the call of his country, and he enlisted as a private in Company E, 10th Pa. Vol., though his profession speedily took him from the ranks to a field where he could be of greater use. Until his death, he was an ardent member of the G. A. R.

Aside from his life in the practice of medicine, he was deeply interested in local history and geneology and especially in the history of his church,—Old Donegal. His book on that historic congregation, with the accounts of the old Presbyterian families associated with it, was a labor of love and is a model of its kind. He became a member of the Donegal congregation in 1845 and for years was the presiding elder and the loved superintendent of the Sunday school. Naturally, with these leanings, he sought membership in historical societies, and was an active member of the Lancaster Historical Society, the Pennsylvania Historical Society, the Presbyterian Historical Society, as well as the Pennsylvania Forestry Association.

In politics, he was never active, but his strong personality made him burgess of Mount Joy for four years, as well as school director.

He was married in April, 1848, to Miss Harriett B. Patterson, of Rapho Township, and is survived by the following children: Dr. James P. Zeigler, Mount Joy, Dr. Walter M. L. Zeigler, Philadelphia, J. Stanley Zeigler, Washington, D. C., and Thomas M. B. Zeigler, Luray, Va. Mrs. Zeigler died in 1900, aged 83, after a married life of fifty-two years.

Dr. Zeigler's death came as a particularly fitting end to a long and full life. He passed an unusually pleasant Christmas day and sat reading in his office to a late hour. On the morning of December 26, he arose, and when partially dressed, feeling unwell, laid down on the bed. The end came suddenly, and apparently without pain, and he was found lying in a natural position of repose. His funeral was attended by the entire country-side, and he rests in the old cemetery of Donegal Church which he so loved.

THOMAS M. LIVINGSTON.
JOHN J. NEWPHER,
THEODORE B. APPEL,
Committee.

THE OPEN-AIR TREATMENT OF PNEUMONIA.

W. P. Northrup, New York City (*Journal A. M. A.*), for over eleven years has been using free ventilation and fresh air treatment in pneumonia, and during the last year he has followed the practice of putting his patients in the New York Presbyterian Hospital for six hours a day out on the roof in all weather in which harsh high winds, rain and snow did not prevent. He gives histories of two cases, both serious, and in one of which he thinks the patient could not have recovered under other treatment. The hospital authorities are so well satisfied of the value of this method that they are making a colossal roof garden on the medical side of the hospital to be an open-air ward for these cases. The patients most favorably affected by open-air treatment are those with severe poisoning, with delirium, partial cyanosis or deep stupor. In Northrup's experience all patients do better in cool fresh air, which can be secured in private practice by screening off a portion of a room by an open window. None have been harmed, in his observation, and some have been greatly benefited and possibly saved by the cold fresh-air treatment. If pneumonia, due to an infecting agent, is thus benefited, the value of the treatment for other infectious diseases is suggested, and, in fact, he has tried it in many others, including typhoid fever with severe bronchitis, whooping cough with bronchitis and convulsions, with excellent results. He considers it, in fact, the ideal treatment for septic fevers. The only regulation is to keep the patient comfortable and especially to keep the feet warm.

PUBLICITY AS A FACTOR IN VENEREAL PROPHYLAXIS.

P. A. Morrow, New York, (*Journal A. M. A.*, October 20), declares that the concealment of facts regarding venereal diseases is a factor in perpetuating the evils attending them. The value of publicity in the suppression of evils has been amply demonstrated of late, but the venereal evil furnishes the most conspicuous example of an evil that flourishes in darkness and owes its power for mischief to the obscurity to which it has been relegated by traditional prejudice. Publicity here is desirable, he says, and is absolutely indispensable to the success of plans for prophylaxis. To the question, is publicity practicable, he answers that it is, and that the sentiment that forbids the open discussion of the subject has no place in the counsels of preventive medicine. Though the newspapers are not available, physicians can work with tracts, pamphlets, conferences, lectures, meetings of medical societies to which the public is invited. Another valuable agency would be a journal of popular medicine, devoted to the study and prevention of all communicable diseases; especially those spread in the ordinary relations of social life. Such a one has already been projected. He believes the present a favorable time to dispel the indifference of the public regarding this evil and to bring about reform.

REPAIR OF THE GENITAL TRACT FOLLOWING LABOR.

Frank C. Hammond, Philadelphia, emphasizes the importance of a thorough examination by inspection with a good light of the genital tract as a routine measure upon the termination of labor. Repair of lacerations should be done within 12 hours if the condition of the patient permits. The technic of suturing the various lacerations is thoroughly detailed. *American Medicine*, September 9, 1905.

AT A DOCTORS' BANQUET.

Dr. J. M. Matthews, Reading, born in 1817 and a graduate of Jefferson Medical College, class of 1840, read the following original poems at a banquet of the Berks County Medical Society last month.

THE DOCTORS' BANQUET.

The doctors dined,
They also wined,
And left behind
All cares of mind
  And all vexations, too:
They just combined
Some hours to find
To ease the mind
From constant grind
  The whole year through.
And so they sat
In genial chat,
Or marveled at
The speeches that
  Favorite guest gave there; and then
Cobwebs away,
Revived, to-day
We see that they
  Seem like a braver set of men.
Some people are unkind:—
Some diners are so blind
They say, they could not find
Their own doorsteps; but never mind.
To telltales we must be resigned.

WHEN I WOULD DIE.

I'm very old, yet would not die,
And have my bones in slumber lie,
Until I know some things are done
Whose doing is but just begun.
I'd like to know our eastern sea
Had kissed her western majesty
At Panama and Colon's gate,
And let our ships, both small and great,
Pass through Dame Nature's narrow strait.
Would then I die? Not yet, not yet!
My heart on other themes is set.
I'd like to see the airships fly
Athwart the clear or cloudy sky,
With or against all winds that blow,
With or against all rains and snow;
Sailing through the angry clouds,
Bearing safely human crowds
From place to place, from town to town,
Now high aloft, now coming down,
Now taking on, now letting go
Its hurrying crowds bent to and fro.
I tell you, Cap, I must be there,
By 2 o'clock I must be there,
Some hours ahead of that slow poke
That belches forth its cinder smoke—
The iron horse whose murderous noise
Kills off the sick, the well annoys.
Some better is the trolley ride
Ten times as good the airships glide.
And then you'd willing die? Not I;
You soon shall see when I would die.
I want to see all warring cease,
I want to see the reign of peace,
I want to see "thy kingdom come,"
The thousand years' millennium.
Then heaven will be upon this earth
And every creature have new birth.
Then, sure, you'd willing die? But why
Would one in glory wish to die?
O wondrous, wondrous are to be
The achievements of futurity.

DEATHS OF ATHLETES AND FATALITIES IN ATHLETIC GAMES DURING THE YEAR.

Robert E. Coughlin presents the following conclusions: Athletes are prone to cardiac lesions, whether a physiological hypertrophy, a hypertrophy with dilatation and endocarditis, a white spot on the heart, myocarditis, or the different valvular conditions. Pneumonia ranks high as a cause of death in athletes because of the cardiac embarrassment in connection with this disease. Athletes appear to be susceptible to infectious diseases, and when affected with these diseases succumb to them as readily as do others. Pulmonary tuberculosis is a cause of death in a large percentage of athletes. The average age at death of athletes is far below that of the average person in the ordinary walks of life. The game of football as played in America during the season of 1905 was the cause of an appalling number of serious injuries and fatalities, and it is very evident that something will have to be done to eliminate the dangerous features of the game, especially mass play. The idea in all kinds of athletics should be to improve and make men, not to maim, cripple, and bury them.—*Medical Record*, June 2, 1906.

OBSERVATION.

Mother—Yes, Tommy, the doctor brought the baby.

Johnny—Well, ma, he ain't very good at matching samples, is he?—N. Y. Sun.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

VOL. X. No. 6. ATHENS, MARCH, 1907. SUBSCRIPTION: $2.00 PER YEAR.

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Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association: President, William J. Mayo, Rochester, Minnesota; President elect, Joseph D. Bryant, New York; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago.
Next Annual Session, Atlantic City, N. J., June 4-7, 1907.

Address.

ORATION ON SURGERY: THE TREATMENT OF HEMORRHAGE OCCURRING WITHIN THE SKULL, THORAX AND ABDOMEN.

BY OTTO C. GAUB, M. D.,
Surgeon, Allegheny General Hospital, St. Joseph's Hospital and Dispensary, Pittsburg.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

A live question at the present time is the management of hemorrhage occurring in any of the real or potential cavities of the body. Its recognition and proper treatment is ofttimes difficult and a review of the literature, emphasizing well-known principles in its treatment and presenting the present status of certain undecided questions, may be considered with profit.

Hemorrhage within these cavities, the result of an injury in the majority of cases, is met with by all physicians in active practice, and no other condition calls for more precise, clean cut judgment in its care.

The physical makeup of the walls of the

three cavities considered in relation to the contained organs is of fundamental importance. Pressure from extravasated blood on the highly differentiated brain tissue, which is enclosed in an unyielding bony wall, contrasts strongly with the pressure exercised on the less specialized tissues of the organs situated within the thorax and surrounded by yielding parietes. In the former, urgent relief is demanded, in the latter expectant treatment may not be amiss.

The physical construction of the abdominal wall and its contained viscera differs from the skull containing the highly specialized brain and the thorax with its less specialized organs. The abdominal wall is composed of soft tissues, lined by a membrane rich in lymphatics, hence, with great power of absorption. This wall encloses some solid organs, but surrounds in greater extent hollow viscera containing foreign material which, in the event of rupture, escapes into the free peritoneal cavity, overshadowing the question of hemorrhage with that of acute septic peritonitis.

The effect of hemorrhage differs according to its situation. Within the skull, the question is purely one of pressure on the brain which if sufficiently grave interferes with the function of vital centers, leading to a fatal issue unless speedily relieved. Within the thorax, the immediate dangerous effect is the sudden disturbance of the cardiopulmonary equilibrium; secondly, the quantity of blood poured into the chest cavity may, in itself, be one of serious moment, and, lastly, a terminal infection may end disastrously. The dangers from an intraäbdominal hemorrhage arise from the quantity of blood lost, the uncertainty of the diagnosis, and, lastly, the imminent risk of infection without solution of continuity of any of the hollow viscera.

It is evident that various factors determine the treatment of hemorrhage. At times aggressive, perhaps again expectant, nowhere else is the Hippocratic teaching better exemplified, that "experience is fallacious and judgment difficult."

The following classification will aid materially in the consideration of this subject.

- Hemorrhage within skull:
  - Extracerebral.
  - Intracerebral.
- Hemorrhage within thorax:
  - Extrapulmonic.
  - Intrapulmonic.
  - Intrapericardial.
- Hemorrhage within abdomen:
  - From solid viscera:
    - Into peritoneal cavity:
      - Liver.
      - Pancreas.
      - Spleen.
      - Kidney.
    - Into own reservoir or extraperitoneal:
      - Kidney.
  - From mesenteric blood vessels.
  - From hollow viscera (usually into their own cavities):
    - Stomach.
    - Intestinal tube.
    - Bladder.

SKULL.

Extracerebral hemorrhage, from rupture of the middle meningeal artery as evidenced by the free interval of consciousness, causes little anxiety in its recognition. It is rather those not infrequent cases, in which a history is given of a blow on the head, described as of sufficient force to cause a tear in a blood vessel, yet causing the patient only to reel, possibly fall, lose consciousness for a moment perhaps, followed by a single act of vomiting and complaint of headache. The patient comes under observation at once or at any later time, perhaps five, six or seven days following the injury, without further history of loss of consciousness. Careful examination reveals a shuffling gait, slow mentality. Subjectively, headache stands prominently forth. The patient lies in bed on his side with arched spine and flexed legs. No localizing symptoms are present. Our astonishment is great, when the skull is opened, to find a tremendous clot of blood flattening the motor-sensory area of a cerebral hemisphere without producing any distinct or localizing symptoms.

In these doubtful cases, the last analysis will show that the diagnosis of an extracerebral hemorrhage is its therapy; that is, exploratory operation.

The point at which the skull should be opened may present many difficulties. The law of probabilities would lead the surgeon to explore the injured side over the site of the anterior branch of the middle meningeal artery, if no clot is found, an opening just below the parietal eminence would expose the next most probable situation of a hematoma as pointed out by Krönlein. If this proves futile and a meningeal hemorrhage is still considered present, explorations should be made on the opposite side of the skull corresponding to the primary openings.

Of the greatest service in making these openings is the Doyen burr. The skull cavity is quickly entered, the dura will not be injured and the amount of traumatism inflicted is reduced to a minimum.

Hemorrhage from other blood vessels (as the large sinuses) may or may not produce focalizing symptoms and are dealt with in a similar manner.

Corresponding in some of its features with the atypical cases of intracranial hemorrhage in the adult, are those intensely interesting cases of intracranial bleeding in the newborn, as admirably portrayed by Cushing. The recognition and treatment of this condition is of such great importance, as bearing on the etiology of the cerebral palsies of children that, in order that the full significance may not be lost, it is essential to quote the diagnostic points verbatim.

"The history of the labor is, of course, all important, also the degree of postpartum asphyxiation. Among the objective signs should be placed first and foremost the condition of the fontanel.

"The membrane is bulging and in some instances may be so tight as to show no pulsation. In some of the patients its bony outline, in consequence of the tension, could not be palpated.

"Convulsions of course, are frequent, and particularly if they do not appear until several days after birth. They may be more or less unilateral in character. There may be also an undue reflex activity, the child starting or twitching in a convulsive way in response to any sensory stimulus. Ocular palsies or difference in size of the pupils apparently are not uncommon, and in severe cases there may be symptoms referable to the medulla, as alterations from the normal in the cardiac or respiratory rhythm. In the early days evidence of paralysis is rare. There may be no difference observable in the muscular tone on the two sides of the body, even when the hemorrhage is confined to one hemisphere."

The surgical procedure consists in making an osteoplastic flap conforming in outline to the parietal bone but just within its borders, incision of the dura, evacuation of the clot, irrigation, suture of the dura and closure of the external wound without drainage.

Intracerebral hemorrhage of traumatic or pathologic origin is rarely amenable to operative surgical intervention on account of the uncertainty of diagnosis and localization in the former and lack of vital resistance in the latter.

THORAX.

The treatment of hemorrhage occurring within the thoracic cavity, usually dependent on an injury, is a source of differing opinions at the present day.

It is a fact that injury of the chest wall causing wounds of its lining pleura alone, with consequent hemorrhage into the pleural cavity, is not uncommon. The amount of bleeding in these cases attains rarely to an extent to make it a determining factor in the ultimate outcome, unless it arises from the internal mammary artery, rarely an intercostal blood vessel.

The treatment is expectant. The quantity of blood in the pleural cavity seldom calls for aspiration, and operative aid is only necessary to relieve a secondary infection.

The treatment of a lacerated wound of the lung, the result of a crushing force, stab or gunshot wound evidenced by blood in the pleural cavity, usually accompanied by air in this space and ofttimes by air in the subcutaneous cellular tissues, is the debatable ground of the present time.

There is no doubt that a very large majority of cases of pulmonary bleeding, the result of injury of any character, recover following the aseptic dressing of the external wound (if any), absolute quiet and compression of the thorax; but there is a class of patients, midway between those who die within a few hours and for whom it is futile to institute any active surgical measures to control the bleeding and those in whom it is so slight as not to warrant intervention.

The surgeon, heretofore, has been content to aspirate the blood contained in the pleural cavity, but only after the lapse of rather long intervals following the injury, for fear of a renewed hemorrhage.

Reports of autopsies of patients, dying as a result of an infection of a hemothorax, demonstrate that most extensive tears in a lobe or lobes of a lung, with an outpouring of blood sufficient to fill a pleural cavity, might have recovered if the secondary infection could have been prevented.

Surgical judgment would debar an operator from opening a thorax, in an effort to control bleeding from a lung, immediately following a crushing injury, producing a condition of collapse, unconsciousness, cold extremities, a small thready pulse, vomiting, involuntary stools and urination, where death results in a few hours. On the contrary, it happens at times that such patients rally and examination reveals an extensive dullness, absence of vocal fremitis, and egophony involving almost completely one half of the thorax.

Again, a stab or gunshot wound of the chest may be followed by a very extensive hemorrhage into the pleural cavity, with or without air, and the symptoms of loss of blood or shock are slight, so that the question may be rightly asked, "Is it not the shock, due to the concussion of the thorax produced by a crushing force, plus the sudden change of equilibrium in the cardiopulmonary circulation, rather than the amount of blood poured into the pleural cavity, that causes death?

The safer treatment appears undoubtedly to be the expectant, but how long this attitude should be assumed depends upon the clinical judgment of the surgeon.

Haim, analyzing forty-eight cases of penetrating wounds of the lungs, reports ten deaths. Four of these followed surgical intervention for relief of infection and he questions whether an earlier resort to surgery would not have resulted better.

From the literature it is stated that the large majority of cases of extensive hemothorax prove fatal during the first few days. Thus Michaux considers a necessary condition for operation a recent collection of not more than twenty-four to thirty-six hours' duration, although Quenu found it necessary to operate only on the ninth day, from which we are led to believe that, if a patient survives the first few days, active bleeding has been controlled by nature, and any operative procedure aims at the removal of the blood from the pleural cavity and, not less in importance, allows the collapsed lung to expand, thereby lessening the possibility of a secondary infection; in other words, an operation at this time is not done to control an active hemorrhage but to overcome its effect.

In stab wounds, where the condition of the patient is constantly increasing in gravity, where the subject loses blood, both by the mouth and through the wound in the thorax, and at the same time the pleural cavity keeps on filling, it is quite evident that something must be done at once. Aspiration in these patients gives relief, the dyspnea diminishes, but it in no sense stops the bleeding.

Before proceeding to a discussion of the technic employed for the control of a pulmonary hemorrhage or relief from its effects, let us turn our attention to the conditions which obtain following a penetrating or lacerated wound of the lung.

According to König's experimental work, wounds of the lungs are closed in three ways: coalescence of the walls of the wounded lung itself; second, by an infiltration of blood in the injured area; third, by the formation of a plastic membrane over the injured site. The accompanying pneumothorax quickly subsides and he was able to inflate the dog's lungs on the second day without leakage.

In all cases in which primary union did not occur, either the wound in the thorax or in the lung was prevented from closing. This hindrance in the thorax was usually due to an infection, while in the lung the extreme and continued bleeding proved detrimental.

As to the rapidity of healing of wounds of the lung, Talke's investigations are suggestive. A reaction is seen microscopically within three hours, during the next three hours an infiltration with small round cells occurs, at the end of three or four days spindle cells are most marked in the cementing substance and on the sixth day cicatrization is present.

König's experimental investigations, coupled with Talke's demonstration of the rapidity of healing of wounds of the lung and the clinical evidence of the sufficiency of expectant treatment in the vast majority of cases, forces one to the conclusion that in gunshot wounds and extensive lacerations of the lung, the result of blunt force, expectant treatment for the first few days will carry with it less mortality than operative aid. Occasionally, in a stab wound, where a certain diagnosis of a severe and continuing hemorrhage is present, active operative intervention may be advisable. It is evident a fair percentage of mortality is the result of a secondary infection of a hemothorax, and it is fair to presume that if the blood in the pleural cavity were thoroughly removed at an early date with an attempt made to inflate the lung, the mortality of the terminal complications might be avoided. König has demonstrated in the dog that a wound in the lung would be closed to the passage of blood or air at the end of forty-eight hours and, if thoroughly inflated, would rupture elsewhere than at the wounded point.

Talke has shown that cicatrization occurs at the end of six days following wounds of the lung provided the walls are in contact, so the fear of a renewal of the hemorrhage following the evacuation of a hemothorax appears groundless. Aspiration of a hemothorax, followed by a reaccumulation of blood, has been reported, but it may well be doubted if the blood stained fluid is not a pleuritic exudate the result of irritation by the effused blood.

Aside from the question of surgical intervention to control an active bleeding by gauze or forcipressure after opening the thorax, the treatment of a resultant accumulation of blood in the chest cavity, after the source of bleeding has been spontaneously controlled, is of paramount importance in the prevention, first, of the permanency of collapse of the lung; second, terminal infections.

These untoward results suggest the substitution of aggressive surgery for this prevention rather than the minor operation of aspiration in which the lung is left to care for itself, or the resection of a rib, done to overcome a secondary infection, not for its influence on a collapsed and retracted lung.

An effort directed toward the inflation of the collapsed lung, at a time the wound therein is sealed, appears a rational procedure. If this is done simultaneously with an intercostal thoracotomy, which will enable the complete evacuation of the hemothorax, with the subsequent accurate suturing of the wound in the chest wall, normal intrathoracic conditions may be restored. The knowledge gained by the lamented Mickulicz in his pioneer work in intrathoracic surgery might, with profit, be applied in these cases. The pneumatic cabinet, devised by his assistant, Sauerbruch, has made possible the safe opening of the chest, the minus atmospheric pressure exerted on the extra pulmonic surface preventing collapse of the lung.

It is true, that in the presence of a large hemothorax, the lung is partially or wholly collapsed, so that the production of a pneumothorax will not be of grave consequence, but the object in view is not the prevention of a pneumothorax; rather, it is the eradication of this condition, which is achieved by the inflation of the lung.

The operation of exploratory thoracotomy as performed by Miekulicz in Sauerbruch's cabinet consists of an incision of the soft tissues between two ribs and parallel with them for a distance of from eight to twelve centimeters. Retraction of the wound edges affords ample room for visual and digital examination. Following the necessary manipulations, the several layers of soft tissues are accurately sutured and no ill results ensue as far as physical examination can determine.

If, following the early evacuation of a large hemothorax the collapsed lung is readily inflatable and experimental evidence seems to justify this conclusion, the same conditions should practically obtain as in the final steps of an exploratory thoracotomy, thereby, restoring the thoracic structures as nearly to the normal as possible and preventing terminal infections with its attendant mortality.

The inflation of the lung by overpressure exerted through the alveoli, by means of Brauer's apparatus or that of Murphy of Boston, would be very serviceable.

If an active hemorrhage can be diagnosed following the receipt of an injury to the chest, which in the judgment of the surgeon will rapidly lead to a fatal issue and may only be controlled by operative measures, the same general technic applies, with perhaps the substitution of a horseshoe shaped flap of the entire thickness of the chest wall to enable freer inspection and manipulation, so that the bleeding area may be controlled by suture or otherwise.

The source of a hemorrhage within the pericardial sac is either from the injured pericardium or heart, usually from both in the individual patient, as the greater number are caused by penetrating wounds, such as stab and gunshot injuries or from perforation by a broken rib. Nine per cent. result from blunt force. Associated injuries of the pleura and lung are common.

Laceration of the pericardium or heart of whatever origin is immediately fatal in ninety per cent. of the injured. Fischer reports four hundred and one cases with forty-three recoveries, or ten and seven tenths per cent. It is this minimum number, coming under the observation of the surgeon, who will present signs of marked collapse and who are extremely restless and dyspneic and suffer a feeling of intense anxiety.

The pulse is feeble, irregular, intermittent, at times almost imperceptible. The heart action is tumultuous, weak and irregular, the sounds inaudible if much blood is in the pericardial sac. The symptoms are not unlike those caused by a lacerated lung, being due to a disturbance of equilibrium, but the diagnosis may be deduced from the size and nature of the wound, its location and direction and the character of the instrument. The good clinical judgment of the surgeon must determine the question of paramount importance; that is, the time to operate for the relief of pressure and suture of a heart wound, or to circumvent an infection of a moderate effusion of blood in the pericardial sac.

To overcome the immediate danger of pressure and bleeding interfering with the action of the heart, operation will be done at once. If, in the opinion of the surgeon, these symptoms are not extremely urgent, the patient's chances will probably be conserved by palliative measures until the attendant shock is combated, when drainage may be done to avoid or lessen the risks of infection.

The outward opening flap, comprising the thickness of the chest wall, excepting the pleura, which may be turned back after the trap door has been made with the subsequent T-shaped incision in the pericardium, which is the technic devised by Terrier, affords access in these cases. The pleura can be drained through the lower outer angle of the wound and the pericardium at the inner angle.

ABDOMEN.

The source of an intraperitoneal hemorrhage, when this diagnosis is made from the history of an injury, the signs of shock, with the presence of fluid in the abdomen or dullness in the right iliac fossa, the continued increase in pain and muscular rigidity, is in the vast majority of cases due to the subcutaneous laceration of one of the solid viscera of the abdomen. Most frequently the liver is lacerated. When associated with hematuria and pain in the lumbar region the kidney is most probably injured.

Trauma of the hollow abdominal viscera rarely, if ever, causes hemorrhage of such degree to make it the determining factor in its treatment. Surgical aid is sometimes enlisted to control that bleeding, the result of disease processes within their cavities.

On the contrary, disease processes of the solid viscera are not made known by hemorrhage requiring surgical aid, with the exception of those interesting cases of profuse bleeding from the kidney, erroneously termed "essential" but now known to depend upon definite, local, pathological conditions. As pointed out by Israel, the usual pathology, found microscopically, consists of a localized area of nephritis in one or both kidneys; the attendant congestion, intermittent in character, causes severe renal colic, accompanied by profuse hemorrhage. Minute examination demonstrates absolutely the absence of any of the usual causes of a hematuria. Nephrotomy without suture of the kidney gives very good results.

The severity of an injury, sufficient to excite a demonstrable collection of fluid within the abdomen, is an uncertain quantity, and this uncertainty affords a good and sufficient reason for an early laparotomy, which discloses, perhaps, in addition to the source of hemorrhage, a tear in a hollow viscus.

Again, it is a matter of clinical evidence, that, if a blood vessel of sufficient size to cause a fatal hemorrhage, is ruptured within the abdomen, as for instance, from a large mesenteric vessel, death will ensue within twenty-four hours, an added reason for early resort to operation.

Clinically, it is evident that the vast majority of injured kidneys result from force expended directly through the lumbar region, so that a laceration of this organ is not often accompanied by complicating injuries to the intraperitoneal structures.

Eliminating bleeding from the urinary bladder, hematuria, varying in quantity, duration and periodicity accompanied by pain in the region of the kidney, is diagnostic, and in the absence of any intraperitoneal mischief the immediate treatment should be expectant. An analysis, by Suter, of seven hundred cases of subcutaneous injuries of the kidneys discloses the fact that most extensive laceration of a kidney occurs without a fatal ending; thus, reports are not uncommon in which a kidney is torn in half or three pieces, perhaps separated entirely from its pedicle, floating in an infected mixture of urine and blood, as found from two to seven weeks later when operative intervention is necessary for the relief of a terminal infection.

Hemorrhage, occurring within the hollow viscera of the abdomen that may call for surgical relief, usually results from an erosion of an artery at the base of an ulcer, as in the gastric, duodenal and typhoidal ulcers. The literature of the present day deals extensively with the treatment of the former two and needs no discussion at this time.

Perforation of the intestine due to a typhoid ulcer is now a well established indication for surgical aid, and it perhaps may not be amiss to raise the question of surgical intervention for the treatment of hemorrhage due to the same cause. It seems strange that the discussion of surgical intervention, as an incident in the medical treatment of typhoid fever, should be initiated by Mr. Ewart, an English physician, who proposed to Mr. Keetley, an English surgeon, drainage of the ileum as a rational procedure in the treatment of this disease irrespective of its complications. The wisdom of this procedure in uncomplicated typhoid fever appears irrational; but in the presence of that most serious complication, hemorrhage, which contributes largely to the mortality of the disease, an operation of this nature may have some justification. Hare, reporting the results in 52,196 patients ill with typhoid fever, records hemorrhage as present in 2,725 cases, or 5.22 per cent., the mortality of which averaged 42 per cent. Nothnagel gives 20 per cent. to 40 per cent. as the low and high rate of mortality due to hemorrhage in typhoid fever and says, "In spite of the much slighter danger from intestinal hemorrhage in the individual case, its much greater frequency puts it, nevertheless, in the front rank among the causes of death. I should estimate its mortality at about two thirds of that of peritonitis."

The physician aims at placing the intestines at physiological rest by appropriate measures, but a certain factor defeats this object. The accumulation of blood within the ileum stimulates peristalsis and in the effort of emptying itself favors the continuation of the hemorrhage. Continuous drainage by means of a tube inserted through the ileocecal valve into the lower segment of the ileum, utilizing the appendix in the manner suggested by Wier, may place the diseased area at physiological rest. Physicians advise and surgeons do not hesitate to open the abdomen when a perforation of the intestine is suspected. The mortality of the operation *per se* in the absence of this complication is low. The operation of appendicostomy should not carry with it any greater risks.

In conclusion, it is worthy of note that the recent experimental researches of Carrel concerning the anastomosing of blood vessels bid fair to provide the surgeon with one more resource that may prove of incalculable value in those patients who are practically moribund from loss of blood.

It has been demonstrated that the blood may be transfused between homologous species without appreciable detriment and has been successfully done in the human being by Crile, so that it becomes a matter of earnest consideration, when an impending death appears to be due solely to the quantity of blood lost and the source of hemorrhage is controlled, whether the crisis does not warrant the procedure.

Original Articles.

SYMPTOMATOLOGY AND DIAGNOSIS OF LOBAR PNEUMONIA.

BY JAMES I. JOHNSTON, M. D.,
Physician to the Mercy and the Presbyterian Hospitals, Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Lobar pneumonia is usually one of the simplest of diseases to recognize, because of the striking character of the symptoms and physical signs. Nevertheless, there are times when our diagnostic skill is greatly taxed to arrive at a clear clinical understanding of this infection.

I have made an analysis of the last one hundred cases from our wards in Mercy Hospital to determine the frequency of the so-called classical symptoms and signs, as well as to mention some of the elements, less frequently noted, that go to make up a diagnosis of this type of pneumonia. The possible contagiousness of pneumonia due to the pneumococcus should be considered. My records show a case where a patient, discharged convalescent and cured from our wards, returned home, slept in the same bed with a fellow workman, and this healthy roommate was admitted one week later suffering with well marked lobar pneumonia. This agrees probably with the presumption of many clinicians as to the propriety of treating pneumonia in separate hospital wards because of its contagious character; as well as suggests its period of incubation, a very few days. We disinfect all sputum from pneumonia patients in our wards.

The importance of the chill, at the beginning, should be borne in mind, and inquired for in eliciting the history. Most writers, justly, give it a prominent place in the symptomatology. It was present at the onset of eighty-two per cent. of my cases. Sometimes only rigors are complained of, but usually the chill is decided and positive. Prodromal symptoms, such as cough, malaise, chilliness, fever, etc., are spoken of by some writers, but the chill (or vomiting or convulsion in children) is so markedly the onset that we rarely are able to get beyond it in history taking.

Pain in the affected side is early complained of, but the pain may be abdominal (a fact that should be remembered) or it may be on the other side or elsewhere, while rarely, as in certain types of pneumonia, there may be little or no pain for several days. In my series, 87 per cent. of the patients had pain over the area of lung involved; 2 per cent. had abdominal pain; 3 per cent. pain in back and legs; 1 per cent. on both sides; and 7 per cent. had history of no pain, at least early. The temperature is constantly high, except in the aged and alcoholic, and remains so until the crisis, except where so-called pseudocrises occur. The diurnal variation is not great. 53 per cent. of my patients had a temperature of 103 degrees or higher, while 29 per cent. had 102 degrees, plus. The pulse rate is greatly increased; 39 per cent. of these patients had a pulse rate of 120 or more, while 17 per cent. had a pulse rate of not less than 110. The respirations are rapid, and dyspnea, due to several causes, depending on the stage of the disease, is frequently noted. 57 per cent. of the patients in this study had over 35 respiratory excursions to the minute; and 20 per cent. had at least 30 per minute. Cough was present in all the cases. The rusty, tenacious sputum, containing the pneumococcus, was characteristic in 37 per cent. of cases of which record was made; 1 per cent. recorded as "prune juice" in character; and in 62 per cent. I could find no record, but, so frequently is this sign made use of in our wards for a diagnosis, I am safe in presuming that almost all of these 62 per cent. showed "rusty" sputum. The physical signs of consolidation, as demonstrated by increased vocal fremitus, dullness on percussion, bronchial breathing, and increased vocal resonance, were present over the left lower lobe in 35 per cent. of the cases; the right lower lobe in 35 per cent.; the left apex in 11 per cent.; right apex in 5 per cent.; somewhere in both lungs in 13 per cent.; and no record made in 1 per cent.

Your attention is asked to the frequency of apiceal pneumonias in this series; viz, 16 per cent. which goes to confirm a belief I already hold, that apiceal pneumonias, particularly in children, are much more frequent than is generally taught. Crises occurred in 72 per cent. of the cases from the fifth to the eleventh day, 31 per cent. of these occurring on the ninth day; 4 per cent. ended by lysis, which made 76 per cent. recovery; and 24 per cent. of the patients died, of this number four were removed from the alcoholic wards. My mortality corresponds with that of most observers. Herpes was noted in many of the cases; no blood examinations were made; urinary analyses showed the presence of true nephritis in only a few of the cases and complicating pleurisy with effusion in less than five per cent. These cases were all true cases of pneumococcic infection or lobar pneumonia uncomplicated by or accompanying other diseases.

In this disease, these clinical signs and symptoms long taught and used in practice are the most important. The chill, localized pain, high and constant temperature, rapid pulse and hurried respiratory excursions, cough, rusty and tenacious sputum, localized single areas of consolidation, as elicited by palpation, percussion, and auscultation, and crises fix the disease in our diagnostic category.

Examination of the blood for leukocytosis (always present in lobar pneumonia) may help to separate this disease from acute tubercular pneumonia. Its determination numerically, is of use for prognosis and in recognizing the spread of consolidation. A limited leukocytosis and an absence of eosinophiles are suggestive of fatal issue. Conversely a marked leukocytosis is consistent with a frank case, and is to be desired. Diminished chlorids in the urine might aid in diagnosis, as it occurs most constantly in pneumonia. We rarely employ its determination in making a diagnosis. The nervous symptoms of pneumonia are only those of toxemia, and are not pathognomonic. The digestive symptoms are those that accompany intense febrile conditions not due to intrinsic gastrointestinal disease. Cough is almost always present but not always productive, particularly in children, the alcoholic, and the aged.

Of the heart, the accentuation of the second pulmonic sound, is the physical sign to be found. Observation of the myocardium daily throughout the disease, gives valuable information as to its strength and the indication for further stimulation. I have made no observations with the sphygmomanometer in pneumonia. Possibly in pneumonia and typhoid fever, we might regulate our stimulation by its readings taken frequently, but the strength of the myocardium can be well estimated by the clinician if ear and stethoscope are carefully and frequently used.

Tympanites is a frequent accompaniment of severe toxic pneumonia and may confuse the diagnosis with that of typhoid fever. A complicating pleurisy with effusion, or a primary pleural effusion can be easily and should be promptly differentiated by the exploring needle. The irregular types are what confuse us. Apiceal pneumonias will be recognized if we disabuse our minds of the belief that it is a rare form; anesthetic pneumonias will be diagnosed from the history as well as remembering that the pneumonia is frequently a pneumococcic infection and not always a bronchopneumonia: croupous pneumonia complicating typhoid fever, by the time of onset, Widal reaction, leukocytosis and by looking for it next the naked chest.

One of the most interesting forms of this disease is the so-called "centric pneumonia." We see it frequently in our wards. The patients present the symptoms of pneumonia,—chill, temperature, pulse, respirations and particularly "rusty sputum," but with physical signs obscure or absent. I have frequently prophesied the physical signs for my next visit to the wards, much to the satisfaction of my intern and myself. A pleural cavity full of dense pus or an interlobar pleural effusion (empyema) gives some physical signs resembling pneumonic consolidation, but the displaced heart and the exploring needle point to the pleura and not to the lung. Edema of the lungs and pulmonary embolus are suggested by the sputum, although the expectoration, in one of my cases of lobar pneumonia, lately, was almost pure blood. Signs of pneumonia in a patient suffering from septic infection suggest septic pneumonia which is not uncommon in pyogenic infection; the sputum, as in mixed infections of the lung, contains streptococci.

In infants and young children pneumonia is suggested largely by the rapid respirations and a respiratory grunt, also frequently by signs and symptoms resembling meningitis. This respiratory grunt is frequently encountered in adults. Pneumonia in the aged, the alcoholic and in the termination of certain diseases can be recognized only by careful physical examinations. The possibility of acute croupous pneumonia occurring in patients suffering from chronic pulmonary tuberculosis should be remembered.

WRONG MEDICINE.

Husband—I can't get the casters under the bookcase to work at all, and I've oiled them twice.

Wife (with conscious superiority)—But you didn't use castor oil.—Stray Stories.

COMPLICATIONS OF LOBAR PNEUMONIA CONSIDERED WITH REFERENCE TO SURGICAL INTERFERENCE.

BY PHILIP Y. EISENBERG, M. D.,
Norristown.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The title of this paper was a matter of assignment by the chairman of the section and not one of choice by the writer. The selection, however, commends itself because of increased interest along the lines of surgical intervention for the relief and cure of grave complications that sometimes follow inflammatory processes both of the lung and of the pleura.

Operative procedure upon the thorax is not a product of modern surgery although more has been written upon the subject and better results have been obtained during the past ten years than during the whole century preceding that time.

Hippocrates, justly styled the "Father of Medicine," equally earned the distinction as the *Father of Surgery* as well, for his writings enter into surprisingly minute details as to methods of exploration of the thorax by rude auscultation and percussion for detection of fluids within the chest; of rules for their removal by paracentesis; of locating abscesses either within or without the lung and of directing precisely the proper point to open and to drain, and, finally, how to thoroughly cleanse pus cavities within the chest walls. Let us bear in mind that these specific directions were written twenty-four hundred years ago and then honestly acknowledge that there is but little new in some fields of work even in this enlightened and progressive generation.

It may likewise be added, that to the procedures taught by Hippocrates there need only be supplemented the prelude and finale —of asepsis and antisepsis—for the correct treatment of complications which may develop during the progress of some cases of lobar pneumonia.

The mortuary records for some years past disclose the fact that while all other diseases exhibit a diminished mortality, pneumonia has steadily inclined toward an increasing death rate, and it can be said that no small share of this increased mortality is due to the various complications that may sometimes be developed during the progress of this formidable disease.

A vital question that confronts the practitioner of internal medicine when he stands in the presence of a case of pneumonia, then, is, "What more prompt and decided measures than now in use should be employed to modify the course of this disease in order to avert the complications that may ensue and thereby lessen its rate of mortality to a certain extent?"

With increased knowledge as to the etiology of disease the present-day treatment of pneumonia can not be said to be an improvement over that in practice more than fifty years ago. And in the language of Ewart, senior physician at St. George's Hospital, London, it may be remarked that "*there is no single treatment* in pneumonia to-day. We seem to have lost the old art of treating the disease while we have failed up to the present time to have developed a new one. There has been a therapeutic paralysis while the mortuary records of the disease have steadily increased."

It may be laid down as an axiom that defective treatment invites fatal issue, prolongs the ravages of the inflammatory processes and, by exhaustion or by extension of diseased conditions to adjacent structures, develops secondary affections such as are about to claim our attention. With this view in mind it may be well to consider how far the early and intense engorgement of lung and the over-burdened right heart may be responsible, either wholly or in part, for the serous effusions into the pleural and pericardial sacs which sometimes follow a lobar pneumonia with its accompanying pleurisy. These two conditions produce the significant phenomena of severe pain in affected side with embarrassed respiration,—two cardinal symptoms that cry out for relief.

The remedy above all others for this condition is *bloodletting* and its value as a therapeutic resource is affirmed upon no less an authority than that of Sir James Paget who stated some fifteen or eighteen years ago that a moderate loss of blood up to a condition of syncope was harmless to the healthy economy as had been proven by the annual spring bleedings for many years, and he added that, in cases of lobar pneumonia, venesection would relieve pain; if it did not arrest, it would at least shorten the duration of the disease and *prevent complications* in a previously healthy subject. Bloodletting is referred to in this connection as a prophylactic measure for the complications that may follow inflammation of the lung. In further support of the employment of bloodletting in the first stage of pneumonia, attention is directed to a discussion that took place but a few years ago in the Royal Medical and Chirurgical Society, England, in which it was declared by a number of distinguished members present that reaction against bloodletting has swung the pendulum too far in the opposite direction and in consequence a valuable auxiliary to the treatment of lung inflammation had been neglected. Dr. Pye-Smith stated he had employed it with great advantage time and again and Dr. Ogle gave a striking example of the beneficial effect of bloodletting in acute lobar pneumonia. Professor Carter of Liverpool detailed cases in which speedy relief was had from its use, and even declared that bleeding may be a valuable measure of rescue from impending heart failure in a later stage of the disease.

Among distinguished French authorities

it may be added that Dieulafoy, Guerin, and others have recently asserted that if inflammation of lung was treated by blood-letting in its early stage there would be no occasion for puncture later,—referring to the collections of fluid resulting from a subsequent or a coexistent pleural inflammation.

It is conceded by all that venesection is contraindicated in the young and old, or should be used with great circumspection as both bear the loss of blood badly, and in those whose health has been undermined by some former or present existing affection; but in the previously healthy, of robust frame and temperament of the plethoric type, stricken suddenly by chill and rapidly succumbing in five or six days or even as late as a month from some subsequent complication, we submit to your thoughtful consideration whether any physician is justifiable at the bar of his own conscience in permitting such a subject to die without having at least offered him an additional chance for his life by a prompt and efficient bleeding, upon the same general principle that the surgeon adopts when he incises a carbuncle or lays open an infected finger.

The writer only makes mention of these views of able and distinguished members of the profession in order to emphasize the almost universal neglect to employ a ready means of assistance in the treatment of a formidable disease and its various complications.

The general consideration of all the sequelæ of lobar pneumonia would lead into fields far too wide to cover in the time-limit of this paper. Attention will, therefore, be directed only to serous effusion of the pleura, empyema, abscess and gangrene of lung. In each one of these morbid conditions a proper treatment hinges upon an early diagnosis.

The presence of either effusion or pus within the thorax may be masked for a time before it is recognized. Fluid may gradually accumulate during the subsidence of the pneumonia and its presence mistaken for supposed prolonged consolidation. If the slightest suspicion, therefore, exists in the mind of the attendant the exploring needle will quickly and definitely settle the question of the presence of either serous effusion or pyothorax.

SEROUS EFFUSION.

It may be opportune at this point to recall the more recent views upon the mechanism of the development of fluid accumulations of a serous character within the pleural sac. Heretofore, absorption was believed to play an important part in the removal of the effusion, hence the derivative treatment by blisters and allied therapeutic agencies hitherto employed. But according to West of St. Bartholomew's Hospital, London, absorption of fluids within the pleura is quite insignificant. The pleura is a lymph sac connected throughout with the lymphatic channels by stomata or small pores of the lung on one side and the thoracic walls on the other. The lymph vessels have valves in them directed outward or away from the pleural surfaces. Such an anatomical arrangement presumes a circulation. Lymph passes into the sac by transudation from the blood vessels and out of it by the lymph channels, and the supply and removal are so finely adjusted as to meet the actual functional demand of lubrication of the pleural surfaces without creating an excess, and the sac is, therefore, sufficiently moist for the easy gliding of the pulmonary over the costal surface of the pleura. The respiratory movement of lung and chest wall forms the motor power for this hydraulic apparatus. Inspiration produces suction that causes lymph to transude the vessel walls and expiration drives it through the stomata; absorption of lymph, therefore, plays a very unimportant part in the disposal of the excess. Accumulation of fluid is either the result of overproduction of lymph within the pleura or of an insufficient withdrawal of the normal flow. It is but a natural sequence that an overlying pleura adjacent to a focus of lung inflammation should be the initial step of a serous effusion—small in the beginning but may in two days entirely fill the thorax on the affected side—and seriously embarrass respiration by compressing the lung against the vertebral column.

EFFECTS OF ACCUMULATION OF FLUID IN PLEURAL SAC.

The immediate effects of a continuous accumulation of effusion within the pleura are as just stated,—compression of lung and prevention of its full expansion. These conditions of themselves offer mechanical obstructions for a removal of the fluid. Should inflammation of the pleura and of subpleural tissues adjacent to the area of consolidation of lung be of severe type, the stomata become choked and the lymphatic channels compressed to almost, if not quite, complete closure, thus preventing the removal of excess of fluid.

The longer the fluid is permitted to remain, the greater is the tendency to coagulation of the fibrin and to sealing up the stomata or openings into the pleural sac. The additional dangers of prolonged retention of fluid are an increasing crippled condition of lung from pressure against the vertebral column causing it to lose its resiliency and expansive power, the formation of adhesions and consequent retraction and deformity of chest wall, permanent thickening of pleura due to weight and pressure of volume of fluid, and a possible death from pulmonary embolism and edema of lung on the unaffected side due to cardiac weakness.

Heretofore it has been thought proper to permit a delay of two or three weeks to supervene in order to allow nature an opportunity to remove the fluid, and under no circumstances was an effort made to withdraw the accumulation during a continuance of the fever.

The practice of the profession has been to follow the teaching of Bowditch who directed that puncture for removal of fluid was only to be made when the symptoms—such as embarrassed respiration, commencing cardiac weakness, beginning cyanosis, obliteration of intercostal spaces—were urgent; or in other words when the thorax was full. We submit whether to delay up to this point is not to cross the danger line and invite failure or chronic disability in consequence.

Puncturing the thorax was directed to be postponed to a time when the removal of fluid was absolutely necessary to save life, and was not performed for the cure of the affection. This postponement was due to the fact that there has been a traditional fear of opening up the thorax. It is with no small amount of satisfaction that we are able to state that this fear has grown less as the experience of surgeons has become greater and the exposure of the pleura is now made as freely as the exposure of other serous cavities. Rickets of Cincinnati says the bony chest may be opened for exploration of pleura or lung with as little danger as a section of the abdominal cavity for operations upon liver, kidneys, or pancreas.

His views are corroborated by a number of other operators. The chief objection to opening the thorax on the part of physicians has been the possible infection of the pleura and the admission of air.

Many experienced surgeons in operations upon the chest are convinced that this is a groundless position whenever a free incision is made under aseptic precautions and a strict antiseptic after-treatment.

When a serous effusion once removed should be followed by a purulent one on a second effort, the presumption is, that a pyogenic organism has been introduced through the tapping. If the puncture is a strictly aseptic one, then West, of St Bartholomew's Hospital, says the last tapping should leave the effusion as clear and clean as the first. In one case West tapped thirty-six times without infection. In another case, after thirty punctures, West, becoming dissatisfied by so many reaccumulations, made a free incision and drained, and his patient made a speedy recovery. There are other operators who advocate the same radical treatment of free incision with drainage until free expansion of the lung has been promoted for some time with the same uniform satisfactory results.

The objection to this method of removing the fluid is the probable development of an empyema, but such an empyema is more susceptible of cure than the ever-recurring serous effusion itself. West has abandoned aspiration for the trocar and cannula with siphon drainage, inclining toward free incision when reaccumulation occurs.

Wilson of Hampstead, England, likewise advocates free incision and drainage in order to relieve pain and prevent adhesions. He would operate in this manner even though there was a coexisting pneumonia with high fever. None of these authorities regret having operated too early, but all have regretted time and again not having interfered early enough. These views are likewise corroborated by Sir Thornley Stoker. The conclusions, then, from a survey of the most recent literature upon the subject as well as that drawn from personal experience of the writer, are:—

First. That the thorax should be tapped the moment a diagnosis has been made of the presence of fluid in sufficient quantity to embarrass respiration even in a moderate degree, the minimum quantity recognizable being one half pint.

Second. When reaccumulation occurs then a free incision should be made and drainage instituted for promotion of expansion of lung.

Third. That a trocar puncture followed upon reaccumulation of fluid by free incision under strict aseptic precautions is less likely to infect the pleura than repeated aspirations.

EMPYEMA.

Empyema and pleuritic effusion have but little in common either in their clinical progress, their pathology or in their ultimate results. One is due to infection from the lung or from without, while the other is due to obstruction in the circulation of lymph. Empyema follows pneumonia in a large number of cases, some authors state as high as fifty per cent. The writer thinks this is too high a ratio. With the empyemas due to a tuberculous pleurisy or streptococcic infection this paper has nothing to do, although they are to be considered upon the same surgical lines as those from pneumococcic infection. Empyema, due to pneumococcic infection, may develop slowly, while pulmonary inflammation is subsiding, and be present sometimes before recognized. Empyema evidently is of more frequent occurrence during the past ten or fifteen years than formerly, due no doubt, to the advent and universal prevalence of la grippe with its general bacterial invasion of the human system.

The duration of this distressing and dangerous malady is from a few weeks when properly treated to a number of years. The writer had a case cured in six weeks and another that lasted almost four years and was ultimately cured by Schede's operation of thoracoplasty, portions of four ribs with their pleural covering being removed. In the language of another, "Empyemas should never be allowed to grow old." The quantity of pus accumulated may reach quarts.

A case operated upon by the writer within four months past discharged three quarts by actual measurement. The prognosis of empyema with rib-resection is good; without such operation, unfavorable. It must be remembered that pus in the thorax presents all the essential conditions of abscess, and must be treated along surgical lines for abscess; and any other method of treatment is simply wasted effort with a correspondingly useless sacrifice of the patient's strength. Pyothorax is a consuming fire within the body that demands instant action for extinguishment. It is as true as it is unfortunate that the history of the treatment of empyema has been marked by slower progress than that of allied pathological conditions of the abdominal cavity. For a long time aspiration was used only to be discarded for incision and the latter in turn has given place to rib resection. The latter is an absolute necessity for exploration by the finger, for the promotion of drainage, and for flushing the pleural cavity when pus is curdy or in masses. In a case recently under the writer's care the pleural cavity was flushed thoroughly as was thought at the time, using nearly a gallon of sterile water, the wound dressed and irrigated in like manner every two days until at the end of a week, when the drainage tubes, becoming clogged, were removed and the edges of the incision retracted; another thorough irrigation brought away a number of masses of coagulated fibrin and flaky pus which otherwise must have remained for a time to liquify, thus producing a continuous discharge of pus.

Irrigation of the pleural cavity has been condemned as an unnecessary and dangerous procedure. Even surgeons of acknowledged skill and ability have discouraged washing out the thorax except in such cases where the pus was of a fetid character. The writer has had no such experience. He believes with West that the danger is only traditional, and thus far he has been unable to discover the responsible author. After hundreds of flushings of the thorax he has failed to observe a single untoward symptom. If the incison is sufficiently large so that the outward flow is equal in volume to that of the irrigating stream upon entrance, if fluid used be not lower in temperature than that of the body, if the stream enters the cavity with a gentle flow, so that no shock occurs to either the organs of circulation or of respiration, then we verily believe no harm can come from irrigating a pus cavity within the thorax whether of the pleura or of the lung.

If pus continues to discharge after a subperiosteal rib resection has been performed, then the surgeon has upon his hands an obstinate case of empyema, whose walls are those of a thickened, eroded pleura, probably with points of adhesions and with a retracted lung which fails to expand normally. In other words, there exists a pus cavity that fails to collapse and adhere. Then it becomes necessary to get rid of the mechanical obstruction which prevents the visceral and costal pleura from coming in contact, and that is the removal of a portion of each rib covering the pus cavity proportionate in length to the size of the cavity. This radical operation, known as Estlander's operation, has been performed by the writer on several occasions with very gratifying results. The falling in of the chest wall invites increased expansion of lung. In one case, now of four years' standing, in which portions of four ribs were removed by the subperiosteal resection, the lad of fifteen years remains well and active with good expansion of lung involved. In one case curetment and packing of pleural cavity were necessary before discharge ceased and collapsed wall and pulmonary pleura became adherent. Boeckel says, "Want of success in these cases is due to too timid resection."

From experience gained in a number of cases and from review of many excellent papers upon the subject the writer deduces the following conclusions for the treatment of empyema:—

First. That empyema is a surgical disease and demands radical treatment the moment it is diagnosed.

Second. That aspiration and even plain incision are hindrances in the efforts to cure the disease and ought not to be employed.

Third. That subperiosteal rib resection is the only treatment that promises successful results.

Fourth. That drainage must be instituted the moment the pus cavity has been evacuated and maintained until the discharge becomes serous in character.

Fifth. That irrigation as a means of cleansing the pus cavity is an essential part of the after-treatment as a matter of surgical cleanliness, and if performed with due precaution is practically harmless.

Sixth. That old empyemas demand multiple rib resection after Estlander's method or its modification by Schede in order to obliterate a persistent pus cavity when primary rib resection fails.

ABSCESS AND GANGRENE OF LUNG.

These two complications of lobar pneumonia or, rather, the sequelæ of the bacterial invasion of the pulmonary tissues are so closely allied in their origin, their clinical progress, and ultimate results, that they may with propriety be briefly considered together.

As a matter of diagnosis it is difficult to differentiate abscess of lung from gangrene of the same organ, and it is of little consequence which complication is present as the treatment in either case is the same. As a means of diagnosis the x-ray has rendered valuable assistance in locating the infected mass, whether of necrotic tissue or of a circumscribed area of suppuration.

The prognoses of these two affections have hitherto been regarded as very grave since seventy-five to eighty per cent. succumb to the septic exhaustion, but, with the advent of more thorough surgery upon the thorax, the future is full of promise. LeConte states that under medical treatment eighty per cent. of the patients suffering from abscess and gangrene of lung die, and after surgical intervention only about forty per cent. This is hardly a fair presentation of the matter, as the surgical cases were selected ones. Whenever the location of the abscess or mass of necrotic tissue is near the periphery of lung, however, the outlook is more favorable. Then the operative method is the *only* line of treatment to be considered. The old aphorism "Ubi pus ibi incisio," holds true in these cases just the same as in treatment of confined pus in other parts of the body.

Diffuse gangrene and cases of multiple abscesses, if recognized, can not be classed as operable cases; but circumscribed gangrene and basic abscess are especially favorable for operation, the latter more particularly, because gravity drainage may be established.

Within the past four years McRae reports two cases of abscess of lung operated upon with satisfactory results. Holt recently published an additional two cured by surgical effort. Fabricant reports thirty-eight cases with twenty-nine recoveries and nine deaths. Eisendrath collected records of ninety-three cases of abscess and gangrene of lung following acute lobar pneumonia that had been operated upon with the result of sixty-three recoveries, ten improved, and twenty deaths. Cavazzani reports eleven cases of lung abscess in which thirteen operations had been performed with but three deaths. And still another authority calls attention to twenty cures and three deaths in twenty-three operations.

These figures make it plain that abscess and gangrene of lung have been more frequent during the past ten or fifteen years than formerly supposed. They also demonstrate the value of surgical interference for the relief of cases that hitherto were regarded as hopeless if nature did not perforate the pulmonary tissue and discharge the pus through the air passages.

Here, too, the fear of infecting a healthy pleura, when such was found in his efforts to reach the area of suppuration, has restrained the surgeon, and limited his sphere of usefulness. And in consequence the method of performing two consecutive operations within two or three days has been enunciated as the *dictum correctum* in these cases.

The first operation is the incision (and rib resection, if necessary) into the thoracic cavity, and the suturing by circular or parallelogram stitching of the pulmonary to the costal pleura in the absence of adhesions, for the purpose of limiting the pus field. These adhesions forming in forty-eight hours, the pulmonary abscess can then be incised and pus cavity discharged.

The second operation is the incision of the pus cavity within the pulmonary area.

In some cases the delay for the second operation may prove fatal in the interim. Later experience proves that while adhesions are of advantage they are not strictly essential, although in some instances contamination of the pleura has resulted disastrously.

Koenig's dictum that the lung must be attacked by operation only when it is possible to exclude the seat of procedure from the pleural cavity has been disregarded by some recent operators.

Rickets urges immediate operation upon diagnosis either with or without adhesions, and. in case of the latter, drainage should be from the lowest possible point. Experience shows that the prospect of healing is better in the lower than in the upper segment of the thorax because the greater rigidity of the upper thorax fails to promote the falling in of chest wall.

Early operations may save many lives if performed immediately upon diagnosis, while delay until the vital powers have been exhausted by long continued suppuration, or by the diffusion of septic matter throughout the system from necrosis of pulmonary tissues, may invite failure.

The probability of hemorrhage upon incision of lung tissue is small, owing to blood-pressure in the pulmonary vessels being but one third of that in the arterial system, and, should it occur, it is controllable by packing.

Surgery of the lung for relief of tubercular deposits and cavities is another inviting field for consideration, but this complication, or, rather, sequela of lobar pneumonia, must be left for a more opportune occasion.

The same must be said of pericardial effusion and the secondary morbid conditions caused by pneumococci floating in the blood current leading to the formation of metastatic abscesses and allied septic infections, as endocarditis, phlebitis, nephritis, and meningitis, all of which have been recently proven by microscopic findings of the diplococcus pneumoniæ in quite a number of cases, to be due to an antecedent lobar pneumonia.

THE TREATMENT OF ACUTE LOBAR PNEUMONIA.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

There is no disease whose treatment is on the whole so unsatisfactory as that of lobar pneumonia, notwithstanding the numerous special methods which have been advanced from time to time. All former particular modes of treatment may be disregarded, since experience has failed to justify their permanent adoption. There are reasons for thinking that the medical profession may be at the very threshold of a specific serum treatment for this disease, and further investigations into the subject are to be strongly advised and encouraged[1].

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[1] See also Serum Treatment of Pneumonia, *Journal, A. M. A.*, December 10, 1905.

PROPHYLAXIS.

It is highly important that the medical profession entertain clear views concerning the prophylactic management of lobar pneumonia; this embraces four main objects: "(*a*) The thorough disinfection of pneumonic sputum as well as that of healthy persons, including the secretions from, and surface of, the upper air passages; (*b*) isolation of the patient especially from the debilitated, and disinfection of the sick-chamber together with its contents after death or recovery; (*c*) the removal of personal predisposition, and (*d*) the introduction of certain public measures."[2] The writer regrets that time and space forbid his entering upon a discussion of the various means of prevention of pneumonia.

HYGIENIC MANAGEMENT.

A leading indication is to afford the patient absolute rest; it is quite probable that inattention to this element of the treatment often leads to a fatal termination. The patient should not be allowed to put forth the slightest muscular effort and should invariably use the bed-pan. Of first importance are certain hygienic details and the diet. Thus correct feeding is indispensable to successful treatment. In cases in which liquid nourishment, such as milk, broth, egg-albumin and the like, is well borne, and is well digested (as shown by the stools), a fair amount of aliment may be allowed. It is wise to underfeed as a rule, rather than excite the slightest gastric disturbance. I can not, however, accept the dictum of Page,[3] Henry,[4] and others to the effect that during the course of infectious processes, water is the only nutriment we possess. Neither can I subscribe to the theory of the "therapeutic fast" during the progress of the infective diseases, including lobar pneumonia.

TREATMENT OF THE TOXEMIA.

Professional views concerning the subject of treatment will probably never reach an agreement until a more rigid bacteriologic classification and differentiation of the cases of so-called pneumonia is accomplished. Doubtless pneumonia is a toxemia or septicemia and, to assist nature in the work of eliminating the toxins from the system, forms an absolute therapeutic indication. This is best accomplished by stimulating the natural emunctories, such as the kidneys, bowels and skin. Unquestionably, the most important channel through which poisons are eliminated is the kidney, and the most effective diuretic is water given in a thoroughly systematic manner, *e. g.*, six to eight ounces every third hour, to be alternated with the feedings. I have found water a most useful agent to maintain nocturnal diuresis,—a matter that is ofttimes overlooked.

The bowels must be kept in a soluble condition by the use of the milder saline preparations, but I have never observed any real advantage from active purgation in this disease. To keep up active glandular action of the general cutaneous surface is an aid to elimination of the poison, although confessedly, of inferior importance to the action of the kidneys. It is best carried out by daily spongings with tepid water, supplemented, if need be, by the use of simple diaphoretic mixtures.

THE FRESH-AIR TREATMENT.

I have recently found that proper ventilation of the sick-room decidedly impresses the course of cases of pneumonia, fresh air being highly beneficial. Its range of influence is powerfully manifested in a variety of directions, and to be effective it must be constantly applied without regard to the seasons or the periods of the day. The cases must be individualized and a certain degree of protection under different conditions of disease may become necessary during climatic extremes.

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[2] The Prophylaxis of Lobar Pneumonia, *American Medicine*, March 31, 1906, pages 474-76, by the writer.

[3] *Medical Record*, December 23, 1905, pp. 1009-12.

[4] System of Practical Therapeutics, Hare.

The fresh-air treatment must be carried out in connection with a rigid, personal supervision by the attending physician, in order to secure the vast benefits of which it is capable in this disease. I need not dwell upon the etiologic importance of bad or vitiated air as a contributing factor in the causation of pulmonary affections, since these are well understood at present writing, and the same is true of the value of pure air as an effective prophylactic agent in both acute and chronic respiratory affections.

In this connection it is to be recollected that the virtue of fresh, open air does not reside in the quality of purity alone, but also and largely upon its dryness and low temperature. As elsewhere stated, "cold is admittedly an effective tonic, if not combined with an excessive humidity."[5] The human body readily endures marked variations of temperature without obvious danger. Moreover, the consumptive, as all know, can sleep with wide open windows during the winter season with vast benefits to his condition. I have recently adopted the same principle in the treatment of cases of lobar pneumonia with excellent results. Ranke has pointed out that the critical body temperature is from 59 to 68 degrees; that is the optimum temperature for man, "securing the well-being of the organism with least expenditure of energy on its part."[6] When the temperature drops lower a greater demand for active tissue change arises. Conversely, higher temperatures require special means for dissipating the bodily heat, such as radiation and conduction from the dilated surface vessels, and increased activity of the sweat-glands. A dry, cold atmosphere tends to abstract the heat of the body directly in a manner analogous to the cold baths and, doubtless, also the nerve centers presiding over the organic functions (*e. g.* circulation, respiration) are similarly stimulated.

"Briefly analyzed, the bracing and tonic effect of a steady cold is as follows: The principal influence exerted, is that upon the nervous system; this is evidenced by its calming effect and the refreshing sleep induced thereby. The appetite and digestion noticeably share in the beneficial influences of this natural agency. In this connection, it should not be forgotten that in a cold climate the system demands more nutritive material than in a warm one, or otherwise there will occur a loss of bodily weight. Fortunately, it is found that patients treated with fresh air can take more nourishment than those subjected to other methods, and readily assimilate it. The heart's action becomes slower and the pulse-tension increased—a desirable object to be attained in the treatment of lobar pneumonia. Cold exerts a tonic influence upon the nerves and vessels in the skin and indirectly it has an important effect in diminishing the frequency of internal congestion. Again cold acts potently in stimulating the respiratory function and, as an immediate consequence, more oxygen is absorbed."[7] It can not be questioned that in a disease in which so many air-cells are rendered functionless as in lobar pneumonia a full complement of oxygen in the atmosphere breathed, is demanded.

To recapitulate, the most important beneficial effects observed from the constant inhalation of cool or cold air may prove helpful; they are refreshing sleep, improved appetite and digestion, lessened severity of the cough, diminished breathing rate, fever and pulse rate; in short, a less marked toxemia.

The principal objection, which can be urged against the fresh-air treatment, is that cold tends to contract the surface vessels and thus retard the loss of heat by radiation and conduction, as well as by evaporation of the cutaneous exhalations. It is admittedly important to maintain the activity of the sweat glands in the skin and the cutaneous circulation in pneumonia, and this I have found can be accomplished by means of sufficient bedclothes together with tepid spongings of the bodily surface. At all events, the theoretical objections which might be urged against the fresh-air treatment are more than balanced by the bracing effect of the dry cold, combined with greater purity of the atmosphere.

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[5] The Fresh-air Treatment of Acute Respiratory Diseases, with Especial Reference to Pneumonia, *Medical Record*, July 7, 1906, by the writer.

[6] *Loc. cit.* by the writer.

[7] *Loc. cit.* by the writer.

The question, whether the patient may not catch "cold" if exposed to a comparatively low temperature on account of open windows, is pertinent. Again would not these conditions be conducive to the occurrence of the more usual complications of this complaint? Cases in which bronchitis supervenes or is associated from the beginning pursue an unfavorable course as a rule. As pointed out in a previous article, "A personal acquaintance with the fresh-air method, although somewhat limited, justifies the statement and belief that pneumonia patients are in no danger of contracting a cold from perflation of the sick-room with fresh air, and that the mere breathing of fresh air or the flowing of cool air over the face while the patient is confined to bed, is practically unattended with risk in this respect."[8]

Finally, it should be recollected that the response to the influence of a steady cold is not always identical and that the peculiarities presented by the individual case must be considered. As a rule, however, there is little, if any, difficulty in selecting suitable cases for its employment. In rare instances only, do contraindications to this measure exist, *e. g.* certain forms of secondary pneumonia, especially when it supervenes in the course of advanced Bright's disease. Again in senile pneumonia and in persons possessing a highly sensitive nervous organization the fresh-air treatment might not be well borne, hence would be inadvisable.

THE USE OF STIMULANTS.

Much attention has been given by the profession to the use of cardiac stimulants in the heart exhaustion of lobar pneumonia. In my view their early employment, so as to ward off cardiac weakness, is to be advised and encouraged, for the reason that, once the depressing influence of the toxemia is manifested in the circulation, it is apt to increase progressively in severity until a fatal termination is reached. It is ofttimes impossible for the physician to detect cardiac exhaustion in its incipiency when the patient is seen by him at intervals of from twelve to twenty-four hours. Hence, in any case in which the condition of the circulation can not be watched constantly either by a competent nurse or a physician, it is well to begin the use of cardiac stimulants in small doses almost from the beginning.

For this purpose strychnin or good whisky or brandy may be employed. Strychnin is one of the most powerful and reliable cardiac stimulants when administered hypodermically, but disappointment may follow its administration, if the dose be massive, by inducing pulmonary congestion in consequence of overstimulation of the cardiac, respiratory and vasomotor centers. It is usual to regard the effect upon the pulse and heart sounds as a criterion of sufficiency, but the effect upon the lungs should also be observed.

In anxious forms of pneumonia, digitalis is an excellent stimulant, more particularly during the advanced stages and in extreme cardiac weakness with depression of the respiratory forces, in which case it is to be used in combination with strychnin (hypodermically). Gugnoni[9] lauds the advantages of digitalis in this disease, and believes that when the abnormal heart action does not respond favorably to the influence of digitalis, the prognosis is almost invariably bad, although other symptoms may not be indicative of approaching danger at the time.

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[8] *Loc. cit.* by the writer.

[9] *Gazetta degli Ospedali*, Milan, XXXVI. No. 118, 1906.

Such stimulants as adrenalin chlorid, camphor, atropin sulphate and nitroglycerin also prove serviceable in suitable cases. For a falling blood pressure with increasing toxemia, normal saline solution given either intravenously or subcutaneously is of signal value. Again for an acute exacerbation of a chronic nephritis in the course of pneumonia, venesection followed by saline infusion is worthy of careful trial.

HYDROTHERAPY.

It has yet to be proven that fever of moderate degree is fraught with danger and, unless the temperature exceeds 104 degrees, hydrotherapeutic measures with a view to reducing it should not be employed in the absence of special indications. It is to be recollected that fever enhances tissue metabolism, which aids in the destruction of the specific virus. Again it is a matter of common observation among clinicians that cases of lobar pneumonia, in which the temperature pursues a comparatively low range, do badly as compared with those in which the temperature keeps at 103 degrees or over.

The best mode of attempting to reduce the temperature is by cold spongings together with the use of ice bags, more especially to the head, chest and abdomen. Tub baths have been for the most part omitted from consideration in recent times, the profession recognizing the therapeutic importance of absolute rest and quiet.

SPECIAL REMEDIES.

The drug treatment of lobar pneumonia, cardiac stimulants aside, has been shown to be of indefinite and uncertain value. One thing is certain, to wit, that the general experience has seemed not to accord with the enthusiastic and highly colored reports as the result of the employment of various special remedies in this disease. The profession has been earnestly attempting to discover substances that possess "bacteriocidal or antiseptic properties" when taken into the system, but the writer is firmly convinced that present-day medicine is not encumbered with a greater fallacy than the vain endeavor to materially modify the course of lobar pneumonia by the use of this class of remedies.

Per contra, excellent observers, among them Peabody, Andrew H. Smith[10], W. H. Thompson[11], and W. W. Baldwin, claim that creosote carbonate has the power to reverse the usual proportion of cases terminating by crisis to those terminating by lysis. I quite agree with the view that the proportion of cases in which the termination by lysis occurs, has increased during recent years; at all events, this has been true as far as my personal observation has extended, but, in many such cases treated by the writers, creosote was not administered. This is to be regarded as evidence to show that not in all instances, in which the carbonate of creosote is employed and termination by lysis occurs, can the slow decline be attributed to the administration of this remedy.

The exhibition of creosotal, however, is a valuable procedure in cases with accompanying bronchitis. Digitalis, salicylic acid, and the subcutaneous injection of quinin, have also been lauded as specifics by certain writers. As well said by Zemp; "Perhaps the nearest approach to a specific treatment of pneumonia is the hypodermic injection of quinin. This treatment receives the endorsement of no less an authority than Nothnagel. Muriate quinin, seven and a half grains, is dissolved in half an ounce of sterile water. This is injected once daily into the lateral parts of the abdomen, where the cellular tissue is loose. Generally two or three injections suffice. The effect on the temperature is less than that on the general condition. It gives one the impression that the subcutaneous administration of quinin lessens the effect of the products of the bacteria which have found their way into the blood current. This treatment is worthy of a very careful trial.'"[12] In sthenic cases (common in the country but rare in cities) venesection is a useful measure if the patient comes under observation immediately after the onset of the disease. It is followed by a fall of temperature, diminished pain and dyspnea, a softening of the pulse, and an amelioration of the nervous manifestations. On the other hand, indiscriminate bloodletting is capable of decidedly harmful effects.

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[10] *American Therapist*, January, 1905.

[11] *Medical Record*, February 1, 1902.

LOCAL MEASURES.

One of the local indications is the disinfection of the respiratory passages, although effective means to this end are perhaps more important from the standpoint of prophylaxis than curative treatment. Applications to the chest of mustard paste are valuable for the relief of pleuritic pain at the commencement of the disease. One of the principal aims of the local treatment is to limit the extent of the pulmonary inflammatory process. Nothing is more effective for this purpose than dry cupping and the number of glasses applied to the chest should be not too few. This may be followed by applications of mustard, turpentine, or better still, cold compresses, as suggested by Buruch. The compresses should be wrung out of water at a temperature of 60 degrees F. (15.5 degrees C.) and, applied to the anterior and posterior portions of the chest (the edges overlapping in the axilla), give similarly good results. They should be made of several thicknesses of muslin, held together by basting, covered by flannel, and firmly secured by safety-pins. A reapplication every half hour or hour is advised.

These cold compresses are of greater therapeutic value than the ice bag, since they are more agreeable to the patient, being less chilling in their effects than is the application of the latter. Finally, when it is difficult or impossible to decide in favor of venesection in sthenic cases, then early local bloodletting (cupping and leeching) may be resorted to as a substitute.

A THEORY AND A CONDITION

BY BENJAMIN LEE, M. D.,
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"It is a Condition which confronts us, not a Theory."—Grover Cleveland.

The American Journal of the Medical Sciences for February contains a well considered article under the title "Compulsory Vaccination, Antivaccination, and Organized Vaccination" by Prof. George Dock of the University of Michigan, which opens with the statement, "The antivaccination movement in the United States is becoming widespread and troublesome." This proposition can not be contravened. His faith in the efficacy of vaccination is so absolute that he does not consider it worth while to waste words in demonstrating it.

His second proposition, however, that "what we need is not statutory compulsion but an organized and scientific procedure that shall have the confidence and support of a large majority of the people" we must differ from absolutely. It is founded on the theory that, if a method of promoting vaccination is devised which will avoid certain objections, what he calls "weak spots," in present legislation, no compulsion will be needed. He would win the people by a vaccine gospel of love. "Many antivaccinationists" he says "are both ignorant and fanatic, but more are merely ignorant. If as serious an effort was made to convert them to vaccination as is now made to turn them the other way I believe, on the basis of some experience, that they would easily submit. Perhaps the most important objectors are quiet but influential people whose opposition has been aroused by some real or fancied injury wrought by the operation." "A proper method would turn those into active supporters of general vaccination."

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[12] *Journal, A. M. A.*, May 26, 1906, pp. 1600-1603.

The first evil to be corrected in the opinion of Professor Dock, is arbitrariness on the part of medical writers and health officials, their readiness to resort to force rather than to rely upon reason. "The results" he claims, "should be capable of being understood by any intelligent and unprejudiced mind." In the second place inspections are often made "by ignorant, brutal and sometimes dishonest and dissipated officials." "But perhaps the greatest evil of all is the fact that at such times" (those of epidemics) "most of the vaccination has been done by unfit persons, often on an alarmed and uninstructed public, with inferior and often wretchedly faulty virus." "Such experiences" he continues, "form the most effective weapon in the scanty arsenal of the antivaccinationist, like an old-fashioned blunderbuss, useful only against a rash but undisciplined foe. But these experiences we can not escape so long as we adhere to our present method or lack of method of managing smallpox and vaccination and so long as human nature remains as it is."

Then, singularly enough, he points to Germany where vaccination is compulsory as affording the lesson of "an immense experiment carried on long enough and on a scale large enough to furnish conclusions of definite value," as proving what may be accomplished by a proper method of vaccination and revaccination in practically banishing smallpox from a country.

His résumé of the vaccination laws of our different states, a perfect hotch-potch of ridiculous, ineffective and contradictory statutes, is complete, and thoroughly demonstrates his claim for the necessity for reform and uniformity in this matter. The acme of absurdity is reached in that of South Dakota where we find it deliberately enacted that "Section 1. It shall be unlawful for any board, physician or person to compel another by the use of physical force to submit to the operation of vaccination with *smallpox* or other virus" and "Section 2. No person shall prevent a child of school age, who furnishes a physician's certificate of successful vaccination with *smallpox* virus within five years from attending school."

We certainly must agree with the writer in his conclusion that our "laws are far too vague and uncertain to give such protection as is needed." The necessity for a systematic registration of those vaccinated is very properly pointed out.

Professor Dock's theory, then, is as follows: The failure to secure general vaccination results from our faulty laws and faulty methods. If our laws were more reasonable and our methods more humane and more scientific the people would flock to be vaccinated and compulsion would be unnecessary. These improved methods would consist first in a missionary propaganda to convert the people to faith in vaccination, second, the employment of kind, gentle and polite sanitary officials, third, in the furnishing of pure and active virus by the state governments or, possibly better, by the national government, fourth, in the appointment of public vaccinators well-educated in the technic of the operation, and the prohibition of private vaccination, and fifth, the registration of the vaccinated and unvaccinated.

Now singularly enough we have "an immense experiment, carried on long enough, and on scale large enough, to furnish conclusions of definite value" as to the success which attends the trial of such a system as the Professor's theory sketches. And there we are met with a condition which demonstrates in the clearest manner the futility of the theory. This experiment is now on trial by Germany's neighbor, Russia. No single method suggested in the theory has been neglected. If the Professor himself had occupied a seat in the Council of the Czar, the scheme could not have been more completely carried out.

Taking the suggestions in order we begin with the missionary propaganda. This is thorough and admirably organized. All through the Empire there are special committees on smallpox (1) state committees; (2) county committees. Independent state committees are found only in a few states of Siberia. In the rest of the Empire state committees constitute a part of the sanitary department of the state government. County committees are established all through the Empire. They consist of the leader of the nobles, the archbishop, the chief of police, the county physician, the mayor and one of the more prominent merchants. In some localities a few more members are added from the clergy and the merchants. It will be observed that the powerful influence of religion is brought to bear in the matter.

The duties of these committees are: (1) To find out the number of children who have not been vaccinated, and keep an exact account of them. (2) To see that all children without exception should be vaccinated by competent persons. (3) To supply the vaccinators with fresh lymph and the necessary instruments. (4) (Gratuitous.) To give free instruction in the art of vaccinating for one or two months, to any one who is sent to them, or comes with that request.

The clergy send to these committees semiannual birth reports. The county committees are subordinate to the state committees and send them semiannual reports on the progress of vaccination. The state committees, which are directly subordinate to the Department of the Interior, send general reports of the states to the Medical Department which has the oversight of the progress of vaccination in the states and publishes the report at the expense of the Imperial Voluntary Society of Economy. The members of the committees do not receive any salary, but, where the general introduction of preventive vaccination has been successful and smallpox has not occurred, they are supposed to receive a special recognition from the Emperor and some appropriate reward. Their names will be preserved in the public records as guardians of the public welfare and as direct fulfillers of the philanthropic intentions of the Emperor. So much for the missionary part of the scheme. I doubt if Professor Dock could add to its persuasiveness, comprehensiveness, and educational value.

In the second place, the system being under the supervision of the Medical Department, and the sanitary officers being educated physicians, it is presumed that they will be humane and gentle in their methods.

Thirdly, as regards virus, there are fifty-five vaccine propagating establishments under direct governmental supervision and control. It is the duty of the committees, as already noted, to furnish lymph whereever needed and to see that it is in good condition.

Fourth, public vaccinators, vaccination is the duty of first, all medical officers, military surgeons included: second, *feldsherrs* (corresponding to hospital stewards or graduated male nurses), third, midwives, who have had special instructions in vaccination in schools for that purpose. In a few countries, any one, male or female, who can present a certificate from a local physician that he or she has had instruction, is permitted to perform the operation.

It is considered as a duty of the state

governors to offer, through the leaders of the nobles, mayors, or police, to the population at large without distinction of rank, to send for one or two months proper persons, say one to a thousand of population, to the vaccination committees for instruction. The matter of the proper performance of the operation with all due precautions is therefore well provided for. These special vaccinators are not as a rule called upon to act unless the staff of physicians, *feldsherrs* and midwives is not sufficient for the task, as in case of sudden and serious epidemics.

Fifth, registration of vaccinated as well as of unvaccinated already referred to is noted as a part of the system.

Sixth, the methods of vaccination are modern.

From the above sketch of the regulations it is evident that the Russian government considers it as one of the most important duties of sanitary officers to disseminate among the people the blessing of vaccination. It also considers it a duty of these officers to encourage the clergy and the representatives of all classes to engage themselves in helping to spread vaccination among the population.

If this admirable persuasive scheme of a paternal government can be improved upon by the Professor we fail to see in what respect.

For particularly successful vaccinations the law provides special recognition; to medical officers who have vaccinated not less than two thousand individuals, a present; to nonmedical vaccinators a money reward or a gold or silver medal. On the official side the plan is complete. The duties are assigned and the officials must live up to their duties. But how about the people! There is no law compelling them to accept this privilege except in the case of soldiers, school children, and railroad employees.

The horse is not simply brought to water, the water is actually brought to the horse. Will he drink? A sorry negative must be returned to this question.

Note the official figures. The total number of registered cases of smallpox in the Empire in 1904 were 103,717, which constitutes 7.3 to 10,000 of the population.

An interesting comparison is made from figures for a ten-year period:

Registered Smallpox Cases.	Total Number.	To 10,000 of Population.
1894	81,890	6.7
1895	75,711	6.2
1896	78,585	6.3
1897	103,621	8.2
1898	148,027	11.5
1899	140,330	10.7
1900	103,695	7.8
1901	93,062	6.9
1902	90,752	6.6
1903	88,264	6.3
1904	103,717	7.3

The number of deaths from the 103,717 cases registered in 1904 was 48,390, or 35.2 per cent. The number of vaccinations in the same year was 5,288,050, or 371 to 10,000 of the population. There have been many epidemics which fact has led to a decided increase in vaccination. It will be noticed from the above table that in the ten years reported the number of smallpox cases reached the awful total of 1,003,927, of whom 388,724 perished. The average mortality per year in every million of population was 463.2. The actual number of deaths in the five-year period ending with 1897, reached the terrible sum of 275,502.

Here then we have the experiment fairly and squarely tried in two great nations side by side, compulsory vaccination on one side of the line, noncompulsory vaccination with every possible reasonable objection to the operation removed, on the other. On the one side a record in one year, 1904, of 189 cases of smallpox, more than one fourth of them imported, of which 25 were fatal. On the other side a record of 103,717 cases with a mortality of 48,390. The population of Russia including Asiatic Russia being a little more than twice that of Germany, had she likewise adopted compulsory vaccination, her cases would have been less than 400 as compared with 103,717, the actual figure, and her deaths only 53 as compared with 48,390.

To make the comparison in a different manner the average annual death rate per million of population during the five years, 1893-1897 inclusive, was 463.2 in Russia and only 1.1 in Germany. These figures are so startling that I hesitate to quote them, but they are from the official statistical records of each nation. As Professor Dock well remarks, "It is a lesson in public service to read one of the annual reports of the German Imperial Health Office." And yet he fails to learn its most obvious lesson; namely, that smallpox can be kept under control only by compulsory vaccination. What is the matter with this elaborate theory and why does it collapse so completely when confronted with a condition. The trouble with it is that it depends upon the postulate that we have in this or any country, "a large majority of people possessing intelligent and unprejudiced minds." Such unfortunately is not the case. Russia is trying the experiment and is disastrously failing, Germany tried it and after failing for years was compelled to resort to compulsory vaccination. We have been trying all sorts of expedients and Professor Dock can tell us as well as another how ignominously we have failed.

There is no such "majority of intelligent unprejudiced people" in our land as he is depending on, and even if there were, an ignorant and prejudiced minority would render this *theory* utterly futile in practice. The *condition* would be too much for its gentle vitality.

INSTRUCTION REGARDING VENEREAL DISEASES.

Bransford Lewis, St. Lewis (*Journal A. M. A.*, October 20), holds that, for the public safety if for no other reason, the laity should receive instruction regarding venereal diseases and their dangers. The nature of the three diseases should be described and their modes of dissemination, especially the fact that they can all be acquired by other means than sexual intercourse, but that syphilis is especially dangerous on account of the contagiousness of its manifold lesions as well as by the blood of infected individuals, and the chances of the innocent acquisition of the disease are thus vastly increased. The far-reaching consequences and complications of these diseases should also be made known; their relations to matrimony and heredity, their longevity and mortality should be fully made known to the public generally, and the popular misconceptions thoroughly corrected. The dangers of gonorrhea to innocent wives and the fact that, contrary to current belief, it outranks syphilis as a direct cause of death should be explained. The conditions of cure of these diseases must be understood before entering into marriage relations or in any way exposing others to the infection.

THE PRESENT STATUS OF THERAPEUTICS.

W. G. Moore, St. Louis (*Journal A. M. A.*, January 13), deplores the present conditions as regards therapeutics, which he thinks tend to neglect of the study and to loss of independence of the practitioner in the utilization of drugs. He attributes this largely to the flood of new remedies let loose on and advertised to the profession, and gives examples of the methods of obtaining testimonials by manufacturers and the extravagant and unfounded claims that are made of various and sundry of these nostrums. He criticizes the medical press for receiving advertisements of such preparations, and pleads for an authoritative board that should decide, independently of all commercial considerations, on the value of such alleged remedies, and eliminate all those that are useless or worse.

The Pennsylvania Medical Journal.

PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.
The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.
Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

ATHENS, MARCH, 1907.

Keep your fears to yourself but share your courage with others.—Stevenson.

DR. DIXON REAPPOINTED.

Governor Stuart has honored himself and his administration by the reappointment of Dr. Samuel G. Dixon as Commissioner of Health. The Philadelphia Inquirer of March 1, in an editorial, says in part as follows:—

"Dr. Dixon in two years has built up a splendid organization, and it is already looked upon as a model by other states. All this has been done only by unceasing, untiring efforts. Commissioner Dixon has taken hold of the important question of the health of Pennsylvania, not with a lot of theories, but with practiced and practical ideas. He has assailed typhoid; has gone after those who polluted streams from which water for domestic purposes is drawn; has led a vigorous fight on diphtheria, and has insisted that the way to get rid of smallpox is to prevent the disease from gaining a footing through the widespread application of the vaccine needle."

In order to build up and maintain this splendid organization Dr. Dixon spends more hours in his office than any other officer in the Capitol. He is among the first to reach his office in the morning, and it is oftener after than before midnight when his work is ended. Throughout the busy days the same uniform kindly courtesy is shown to callers from the city and from the country, to the legislator and to the crank with his complaint. No rational man or woman could spend a half hour with one of such quiet, genial and manly ways and then go out and speak of him in the terms used by the average antivaccinationist. However, back of his manly smile and gentle ways one can read the character that has made Dr. Dixon renowned as a scholar, a practical sanitarian and an efficient executive.

Medical men and their families, as well as laymen, reap, perhaps unconsciously, the benefits accruing from the work done in the Department of Health, but the former have an additional reason for congratulation in the knowledge that under all situations the honor of the profession as well as the welfare of our people will be well conserved by Dr. Dixon. S.

MEDICAL LEGISLATION AT HARRISBURG.

The act, now in force regulating the examining and licensing of those desiring to practice medicine in the State of Pennsylvania, is faulty in that it fails to establish a common grade of qualification. No matter how honestly the marking of the papers may be done, the personal equation establishes as many degrees of qualification as there are boards of examiners. The state is now threatened with an increase in the number of boards. It does not require a great stretch of imagination to appreciate that this multiplicity of boards will eventually render this legislation a veritable farce.

Appreciating this, the Committee on Public Policy and Legislation asked that public interest be protected by requiring that licenses should designate the board granting the license. It at once became evident that sectarian medicine was purely nominal, for the physicians claiming to be influenced by sectarian dogmas at once claimed to be first of all physicians, and, in a very secondary degree, sectarian followers. After consultation with members of the legislature the committee framed and offered a one board bill, known as the Bowman Bill, for enactment. While the exigencies of the case prevent this effort from being strictly ideal, its adoption would mark a decided advance in legislation protecting the people of this commonwealth from unqualified practitioners of the healing art. A single board definitely determines the minimum of qualification.

For this reason, if for no other, the Bowman Bill merits the support of every member of this society. On second reading the vote of the House of Representatives was 70 to 70. However, a motion to reconsider prevailed and the bill is now awaiting second reading.

This vote evidences the need of concerted as well as prompt action by every member that the measure may become the law of the state. If this much may be attained at this time, an ideal law will eventually be evolved as our profession grows in perfection.

The Wickersham (osteopathic) Bill is at this writing also on second reading. If one fails, the other is almost sure to pass. C.

VOTED AGAINST THE BOWMAN BILL.

When the Bowman One Board Medical Bill (H. B. 144) came up for second reading, March 12, the yeas and nays were called by those opposed to the bill. The vote being a tie, the bill fell but a reconsideration was secured and the bill will rest for the present. Some forty members were necessarily absent from Harrisburg when the vote was taken. The following voted for the bill:—

R. Scott Ammerman, William J. Barton, Charles A. Bentley, James I. Blakslee, Howard Bliss, Norman L. Bonbrake, John W. Bowman, Berkey H. Boyd, Patrick F. Boyle, James Brann, Robert Burns, John S. Carroll, Samuel B. Cochrane, William J. Cook, Frank Craven, Harris L. Crumling, Jonathan Currier, William N. Decker, George W. Drury, Andrew B. Dunsmore, Patrick F. Enright, Edward H. Fahey, John M. Flynn, Frederick D. Freudenberger, Leopold Fuerth, Peter Gearhart, Alvin S. Haines, John J. Harrigan, Rein K. Hartzell, John G. Homsher, Joseph S. Hunt, Joseph B. Ireland, William H. Irwin, Edmund James, Thomas Keile, James A. Kennedy, David H. G. Kuser, Robert H. Longwell, J. Milton Lutz, Elmer E. McAdoo, James F.

McAndrews, Ira McJunkin, Ezra S. Meals, Quinn T. Mickey, Thomas Z. Minehart, Asher Miner, George Moscrip, A. S. Moulthrop, Frank G. Mumma, S. Taylor North, Robert Osborne, Jr., William H. Pratt, Hugh W. Ramsay, John H. Rex, John Reynolds, Walter S. Reynolds, Samuel Ripp, Robert J. Savidge, Samuel B. Scott, Frank E. Smith, Charles A. Snyder, W. W. Sprowls, Bruce F. Sterling, Cyrus Lee Stevens, Daniel B. Sullivan, William Toner, E. P. Weddell, William F. Whitman, William L. Wood, James F. Woodward.

The following are recorded as voting against the bill:—

Charles A. Ambler, Abington, Montgomery Co.; Edward E. Beidleman, Harrisburg; Daniel Boden, Carnegie, Allegheny Co.; Nicholas Burke, Scranton; Joseph Call, 1917 N. Eighth St., Philadelphia; John W. Carson, Beaver Falls; Samuel Christian, 4504 Frankford Ave., Philadelphia; James Clarency, 704 W. Lehigh Ave., Philadelphia; Samuel D. Clyde, Chester; John Connell, 4600 Kingsessing Ave., Philadelphia; Hyatt M. Cribbs, Verona, Allegheny Co.; Richard Curry, 146 E. Allen St., Philadelphia; W. H. H. Davis, West Chester; Robert R. Dearden, 411 Walnut St., Philadelphia; D. F. Dempsey, Dunmore, Lackawanna Co.; Frank J. Detzel, Erie; W. C. Eichenberger, 2048 N. Hancock St., Philadelphia; George A. Elsasser, 744 N. Twentieth St., Philadelphia; John L. Emerson, Titusville, Crawford Co.; James M. Esler, Tarentum, Allegheny Co.; J. S. N. Ewing, 1872 Buckius St., Philadelphia; Harry A. Fricke, 3513 N. Warnock St., Philadelphia; William H. Funston, 809 S. Sixteenth St., Philadelphia; Alfred B. Garner, Ashland, Schuylkill Co.; John R. Gillette, 1801 N. Fifteenth St., Philadelphia; David H. Guise, Emmitsburg, Md.; Robert P. Habgood, Bradford; William W. Hall, West Pittston; Timothy D. Hayes, Scranton; John R. Huhn, 2313 Wharton St., Philadelphia; David Hunter, Jr., 3402 Perrysville Ave., Allegheny; James N. Hunter, Pottsville; Frederick E. Keene, 1828 S. Sixteenth St., Philadelphia; Michael H. Kennedy, 5213 Butler St., Pittsburg; Edgar R. Kiess, Hughesville, Lycoming Co.; Amos W. Knepper, Somerset; Adam E. Kohr, Hanover, York Co.; Josiah M. Landis, Elroy, Montgomery Co.; William P. Logan, 3523 N. Twenty-third St., Philadelphia; Harry S. Lydick, Fleming and Falck Aves, Allegheny; Alfred Marvin, Matamoras, Pike Co.; Ira D. McCord, Chester Springs, Chester Co.; H. G. McGowan, Geigers Mills, Berks Co.; William McIntyre, Sharon, Mercer Co.; James A. McKean, Smethport, McKean Co.; Charles J. Mesta, West Homestead, Allegheny Co.; Ira A. Milliron, Franklin, Venango Co.; John W. Morrison, Reading; Gabriel H. Moyer, Palmyra, Lebanon Co.; Conrad Muhly, 1627 S. Sixth St., Philadelphia; Thomas O'Shell, 1810 Sidney St., Pittsburg; William H. Owens, Nanticoke, Luzerne Co.; James H. Parkhill, West Leisenring, Fayette Co.; G. M. Patterson, Williamsburg, Blair Co.; Andrew J. Pfaff, 225 North Peach St., Philadelphia; J. Ross Raymond, Northeast, Erie Co.; Z. Taylor Rickards, 1512 N. Fifty-fifth St., Philadelphia; John H. Riebel, 623 W. Girard Ave., Philadelphia; H. I. Riley, Millvale, Allegheny Co.; Michael F. Shannon, Wilkes-Barre; Irwin M. Sharman, Leesport, Berks Co.; William D. Shields, Clarington, Forest Co.; Milton W. Shreve, Erie; John P. Sipes, McConnellsburg, Fulton Co.; Edmund B. Smith, 3757 Boquet St., Pittsburg; Robert H. Smith, 2119 S. Third St., Philadelphia; Samuel A. Steel, Wilkinsburg, Allegheny Co.; Walter Stradling, 2065 East Cumberland St., Philadelphia; Harrison Townsend, 4103 Baltimore Ave., Philadelphia; Henry G. Troxell, Williamsport; William T. Young, Farrandsville, Clinton Co. S.

ARE YOUR NAME AND ADDRESS GIVEN CORRECTLY.?

Several departments are omitted this month to make room for the annual list of officers and members of component societies. Efforts have been made to make this list as accurate as possible but errors in a list of names will occur in various ways and when once made are not readily detected. Will each member kindly turn to the list and promptly notify the secretary of the State Society of any error in either his name or address? Errors are less likely to occur when a name is given in full than when initials only are given. S.

UNIVERSITY RAISES REQUIREMENTS FOR ADMISSION TO MEDICAL SCHOOLS.

Recognizing the advantages of a broader general education and the growing necessity of the prospective student having in addition special preparation for the study of medicine, the Board of Trustees of the University of Pennsylvania has recently decided to raise the requirements for admission to its medical school. These requirements include two years of general college training and in addition a certain knowledge of biology, chemistry and physics. According to the plan which has been adopted, the standard will be raised gradually, beginning with the academic year 1908-1909 and reaching the maximum in 1910-1911. F.

State News Items.

MARRIED.

Dr. Oscar F. Blank and Miss Diana VanGorder, both of Bethlehem, February 1.

Dr. Walter M. Reedy, Scranton, and Miss Mary Teresa Healey, Dunmore, February 7.

Dr. Frederick Fraley and Miss Mary Lapsley Pyle, both of Philadelphia, recently.

Dr. Victor Muzurie Reynolds, Darby, and Miss Lulu Ann Dobelbower, Prospect Park, January 25.

Dr. James R. Durham, Warren, and Miss Elizabeth F. Jones, Wilmington, Delaware, February 5.

DIED.

Dr. William C. Lott (Univ. of Penn., '85) in Philadelphia, January 21, aged 49.

Dr. Jacob Greenawalt (Univ. of Penn., '70) in Pittsburg, February 19, aged 76.

Dr. Hugh Douglas McLean (Jefferson Med. Coll., '54) in Philadelphia, February 3, aged 77.

Dr. Frank W. Talley (Univ. of Penn., '87) in Philadelphia, from nephritis, February 16, aged 41.

Dr. William S. B. Poole (Western Reserve Univ., Cleveland) in Ruffsdale, from dropsy, recently.

Dr. Elmer E. Wiles (Jefferson Med. Coll., '84) very suddenly in his office in Rimersburg, recently, aged 50.

Dr. John Blackwood Strachan (Univ. of Penn., '52) in Petersburg, February 6, after a long illness, aged 77.

Dr. Christian Rohr Jones (Jefferson Med. Coll., '90) in Hazleton, January 30, from hypertrophy of the liver, aged 43.

Dr. James Alexander Finley (Univ. of Penn., '72) of Haverford, at Bryn Mawr Hospital, January 23, after an operation for aneurism, aged 57.

Dr. George Ross Griffith (Sterling Med. Coll., Columbus, Ohio, '72) in Carnegie, February 4, from nephritis, aged 60.

MEMBERS RECENTLY DECEASED.

Amos T. Williams (Univ. of Penn., '00) of Ridgway, died at Southern Pines, N. J., February 18, from heart failure, aged 34. He was a member of the Elk County Society.

Wesley A. Derhamer (Jefferson Med. Coll., '75) died at his home in Lehighton, February 11, after one week's illness, aged 57. He was a member of the Carbon County Society.

William H. H. Miller (Pennsylvania Med. Coll., '49) died at his home in Williamsport, February 1, from nephritis, aged 81. He was a member of the Lycoming County Society.

William C. Pickett (Jefferson Med. Coll., '95) died at his home in Philadelphia, February 5, from acute articular rheumatism, aged 37. He was a member of the Philadelphia County Society.

James H. Delaney (Bellevue Hospital Med. Coll., '86) was found dead in his office at Erie, February 12, from heart disease following influenza, aged 54. He was a member of the Erie County Society.

William O. Lantz (Jefferson Med. Coll., '81) died at his home in Lemasters, February 15, a few hours after an operation for complicated disease of the liver, aged 51. He was a member of the Franklin County Society.

Benjamin Franklin Price (Cincinnati Coll. of Med. and Surg., '73) died at his home in Braddock, February 22, of consumption complicated with heart disease, aged 62. He was a member of the Allegheny County Society.

ITEMS.

Dr. R. W. Brady and his family of Honesdale have gone to Estero, Florida, to spend February and March.

Dr. William C. Hensyl of Berwick, is ill with typhoid fever. His mother who also had the fever is slowly improving.

Dr. J. Alden Lichty, Pittsburg, was injured, and his automobile demolished in a collision at Neville, February 22, with a large touring car.

Hospital for Danville. A broad minded and philanthropic citizen of Danville will present to the city a new hospital which will be known as the "Ark Haven Sanitarium." The land has already been purchased and plans completed.

Reports of County Societies.

BERKS—February.

The regular meeting of the Berks County Medical Society was held in Medical Hall, Reading, February 12, 1907, the following members being present: Drs. W. S. Bertolet, Burkholder, Cleaver, J. F. Feick, Frankhauser, Hartman, Hawman, Hetrich, Keiser, LeFevre, Lytle, Overholser, Runyeon, Seaman, Shoemaker, and Werley.

Dr. F. W. Frankhauser, for the committee on legislation, presented resolutions as follows: Urging the passage by the legislature of the one board medical bill; calling upon the legislature to hold inviolate the existing measures with respect to vaccination; urging the United States Senate not to pass the measure now before it to legalize osteopathy, and advocating the construction, by the state, of an institution for the treatment of inebriates as tending to prevent insanity and crime.

It was decided to recognize the ninetieth birthday anniversary of Dr. James Matthews, which occurs on February 22. Dr. Matthews is the dean of the medical profession in Reading. The members of the society will either call in person, or send to the aged physician their congratulations.

Dr. Walter M. Bertolet, Reading, was elected a member.

A paper on "Eclampsia" was read by Dr. Rufus E. LeFevre, and was discussed by Drs. Israel Cleaver, C. D. Werley and George W. Overholser.

Dr. William S. Bertolet read a paper on the "Phenyl Hydrazin Test for Sugar."

S. Banks Taylor, Reporter.

WASHINGTON—March.

The March meeting of the Washington County Medical Society was held in Washington, with thirty-nine members present. The roads were bad, but the country doctors were not deterred from attending, and it was one of the most interesting meetings held for a long time. The committee on increase of membership held a meeting before the regular session of the society, and reported a plan of effort to try and put every man into the society that should be there. As a result, six new members were voted in, as members of the society, Drs. Oscar McDonough, Philip Ley, R. B. Stewart, T. J. McNulty, W. M. Bigger, and R. L. Ashbrook.

The committee on legislation reported that during the interval of meetings they had acted for the society on the proposed bill to abolish vaccination, that they had pledged the society to stand by their belief in vaccination, that a copy of the same had been sent to the senator and members of the House, and that there had been sent to these same gentlemen at Harrisburg, ninety-five letters and six petitions containing 150 names in support of the Bowman Bill.

The following resolution was offered by Dr. Edgar M. Hazlett of Washington and unanimously adopted:—

Whereas, We believe that the young physician is sadly handicapped through ignorance of what pertains to the business end of his profession, the knowledge of ethics, and the necessity of organization, therefore be it

Resolved, That we, the members of the Washington County Medical Society, believe that a course in "Medical Economics" would be of great value to our students and medical men, and that we request the medical colleges of our state to provide for such a course.

Furthermore that the component societies of the state be requested to consider this question.

On motion it was decided to hold the meeting for May 14 in Donora.

Dr. Walter F. Donaldson of Pittsburg was present on invitation, and read a paper on "Acute Hyperemia of the Prostate" which was discussed by Drs. Thompson, Jr., Patterson and Wood. A vote of thanks was tendered the Doctor.

The regular program was then taken up, and elicited quite a spirited discussion, which was taken part in by a majority of those present. Dr. Kelso's instructions on "Anatomy of the Female Pelvis" demonstrated on the pelvis, was especially good.

The feature of the day was the paper by Dr. Joseph McElroy, one of our oldest members, on "The Use and Abuse of Forceps." The Doctor has been in active practice since 1871, and he has not allowed himself to become rusty or lazy in his professional work.

On motion a resolution of encouragment and good wishes was ordered sent to the convention of the "American Road Makers Association," now in session in Pittsburg.

John B. Donaldson, Reporter.

OFFICIAL TRANSACTIONS.

The Medical Society of the State of Pennsylvania.

Organized 1848. Incorporated December 20, 1890.

Officers and Members of the Sixty-two Component County Societies. Total Membership 4693.

ADAMS COUNTY SOCIETY.

(Organized August 25, 1904.)

President..Robert B. Elderdice, McKnightstown.
V. Pres....Harry M. Hartman, Gettysburg.
J. Lawrence Sheetz, New Oxford.
Secretary..Henry Stewart, Gettysburg.
Treasurer..James P. Dalbey, Gettysburg.
Censors....Emanuel G. Spotz, Hampton.
James P. Dalbey, Gettysburg.
William E. Wolff, Arendtsville.
Com. on Pub. Policy and Legislation.Nicholas C. Trout, Fairfield.
J. Lawrence Sheetz, New Oxford.
George L. Rice, McSherrystown.

Stated meetings the second Monday in January, April, July, and October, at 2 P. M. in Gettysburg or other places as may be determined by vote of the society. Election of officers in January.

MEMBERS (19).

Cashman, Elmer W., York Springs.
Dalbey, James P., Gettysburg.
Dickson, John R., Gettysburg.
Elderdice, Robert B., McKnightstown.
Gettier, Harry E., Littlestown.
Glenn, James E., Fairfield.
Hartman, Harry M., Gettysburg.
Hoechst, Harleigh B., East Berlin.
Miller, Tempest C., Abbottstown.
O'Neal, Walter H., Gettysburg.
Rice, Alfred C., McSherrystown.
Rice, George L., McSherrystown.
Seaks, George H., New Oxford.
Sheetz, J. Lawrence, New Oxford.
Spotz, Emanual G., Hampton.
Stewart, Henry, Gettysburg.
Trout, Nicholas C., Fairfield.
Wolf, Frederick C., East Berlin.
Wolff, William E., Arendtsville.

ALLEGHENY COUNTY SOCIETY.

(Organized April 20, 1865. Incorporated January 30, 1892.)

(Pittsburg is the P. O. when street address only is given.)

President..Robert W. Stewart, 4715 Fifth Ave.
V. Pres....Markley C. Cameron, 4210 Butler St.
DeWitt B. Nettleton, Sewickley.
Edward Stieren, 3603 Fifth Ave.
Robert L. Walker, Carnegie.
Rec. Sec...Edward E. Mayer, 524 Penn Ave.
Cor. Sec...William H. Cameron, 4210 Butler St.
Treasurer..William B. Ewing, Westinghouse Building.
Censors....Theodore J. Elterich, 522 Madison Ave., Allegheny.
Frank F. Simpson, Bessemer Building.
Thomas G. Simonton, 611 Aiken Ave.
Com. on Pub. Policy and Legislation.Edward B. Heckel, 524 Penn Ave.
Adolph Koenig, Westinghouse Building.

Executive meetings shall be held on the second Tuesday of January, April, July, and October, at 3 P. M. Scientific meetings shall be held on the third Tuesday of January, February, March, April, May, June, September, October, November, and December, at 8:30 P. M., and on the first Friday of November, December, February, and March, at 3:30 P. M. Twelve members shall constitute a quorum. Sections on Ophthalmology, Otology, Laryngology and Rhinology will meet in Dispensary Hall, on the first Wednesday of October, November, December, January, February, March, April, and May, at 8 P. M.

Homestead Branch—Scientific meetings will be held on the afternoon or evening following the regular scientific meetings of the county society.

MEMBERS (606).

Adair, William G., 501 Arch St., Allegheny.
Ahlers, George L., Cedar and North Aves., Allegheny.
Alcorn, J. Frank, 511 Rosedale St., Wilkinsburg.
Allen, Charles W., Allegheny City Home, Hoboken.
Allison, Robert W., 808 Wood St., Wilkinsburg.
Allison, Thomas B., Tarentum.
Allyn, George W., 504 Empire Building.
Anderson, Clyde O., 7043 Frankstown Ave.
Anderson, G. C., 1504 Lincoln Ave.
Anderson, J. Hartley, 4630 Fifth Ave.
Anderson, James M., Wilkinsburg.
Ankrim, Louis F., 5201 Penn Ave.
Arbuthnot, Thomas S., Fifth and Putnam Aves.
Arn, Gottfried, 306 North Ave., Allegheny.
Arnold, Charles A., 156 McClure St., Allegheny.
Arthur, Herbert Spencer, 413 Shaw Ave., McKeesport.
Asdale, Joseph Wallace, 5523 Ellsworth Ave.
Asdale, William J., 5523 Ellsworth Ave.

Atkinson, Daniel A., 602 Oakwood Ave., Westview.
Ayres, Samuel, Westinghouse Building.
Babb, Walter M., 1001 Western Ave., Allegheny.
Bair, Charles Homer, 347 8th St., Homestead.
Bair, George E., Braddock.
Baird, W. Chalmers, Colorado Springs, Colorado.
Baker, Theodore, 1002 Franklin St., Wilkinsburg.
Ballagi, John, Homestead.
Ballard, H. S., McKeesport.
Barach, Joseph H., 4502 Fifth Ave.
Barchfeld, Andrew J., 106 S. Eighteenth St.
Barkley, A. Wray, 2114 Perrysville Ave., Allegheny.
Barnhart, H. B., McKees Rocks.
Barr, John A., McKees Rocks.
Bartilson, Benjamin M., Braddock.
Barton, Claude, Realty Building, Homestead.
Batten, John M., Downingtown (Chester Co.).
Beach, William M., Bessemer Building.
Beatty, Robert C., 329 South Highland Ave.
Behan, Richard J., 627 Homewood Ave.
Bennett, Oliver J., Western Penitentiary, Allegheny.
Benz, Henry J., 5018 Liberty Ave.
Beswick, George L., Wilmerding.
Billings, Frederick Tremaine, 4504 Fifth Ave.
Bixler, Lewis C., 216 North Highland Ave.
Blachley, Oliver L., 325 Los Robles St., Pasadena, Cal.
Black, J. L., 65 Washington Ave., Allegheny.
Blackburn, James P., 313 Penn Ave., McKeesport.
Blair, Esther L., Dixmont.
Blessing, Frank C. S., 5440 Second Ave.
Blume, Frederick, 524 Penn Ave.
Bode, William C., 2005 Carson St.
Boggs, Joseph C., Pennsylvania Ave., Allegheny.
Boggs, Russell Herbert, Empire Building.
Booth, Bradford A., Bureau of Health.
Borland, Elmer B., 6200 Penn Ave.
Boucek, Anthony J., 624 Chestnut St., Allegheny.
Boucek, Charles F., 624 Chestnut St., Allegheny.
Boyce, David C., 846 Western Ave., Allegheny.
Boyce, John W., Diamond Bank Building.
Bradford, C. L., 315 Empire Building.
Brenneman, Richard E., Pittsburg Life Bldg.
Brown, John R., 1005 Wylie Ave.
Brown, John W., 1303 Wylie Ave.
Brown, Silas S., 2533 Perrysville Ave., Allegheny.
Bryant, William C., 5424 Second Ave.
Buchanan, John J., 1409 N. Highland Ave.
Buck, Anthony John, Mill City.
Bulford, Daniel N., 100 E. North Ave., Allegheny.
Bunce, Horace E., Jr., 1020 Westinghouse Building.
Burke, John G., 627 Herron Ave.
Burket, Albert H., McKees Rocks.
Burket, John H., R. F. D. 4, Carnegie.
Burleigh, William T., 808 N. Negley Ave.
Burns, R. G., Bureau of Health, Allegheny.
Burroughs, Hamilton S., 300 N. Highland Ave.
Burt, James C., 1111 Westinghouse Building.
Bush, Alpheus A., 114 Brushton Ave.
Buvinger, Charles J., Bessemer Building.
Caldwell, J. Clarence, Bakerstown.
Cameron, Markley C., 4210 Butler St.
Cameron, William H., 4210 Butler St.
Campbell, Charles L., Sheridanville.
Campbell, Robert A., Homestead.
Campbell, William M. F., McKees Rocks.
Carroll, Thomas B., 326 South Highland Ave.
Cartwright, Harry B., 6101 Penn Ave.
Cathcart, Wilson B., R. F. D., Mt. Pleasant (Westmoreland Co.).
Caven, William A., 2126 Fifth Ave.
Chalfant, Sydney A., 423 North Highland Ave.
Charles, William S., 209 South St. Clair St.
Chessman, Leroy H., Center Ave. and Chauncey St.
Chessrown, Archibald V., 5443 Fifth Ave.
Christy, T. Chalmers, 99 North Hudson Ave., Pasadena, California.
Clark, Astley C., 3420 Butler St.
Clark, Harry E., Sheridanville.
Clark, Henry H., 3420 Butler St.
Clark, Robert W., 655 Maryland Ave.
Clark, Walden A., 4407 Butler St.
Clarke, Robert C., 129 South Highland Ave.
Clementson, William A., Braddock.
Cochran, T. Preston, 2301 Salisbury St.
Colcord, Amos W., Clairton.
Cole, William W., 708 Arch St., Allegheny.
Conti, Gaetano, 25 Chatham St.
Cook, Charles B., 1534 Brownsville Road.
Cope, John C., 320 Bessemer Building.
Cope, Pierson C., Braddock.
Cowan, Victor W., 823 Fifth Ave., McKeesport.
Craig, Robert C., Pittsburg Life Building.
Craighead, Nancy B., 705 Arch St., Allegheny.
Crawford, J. Slater, Ingram.
Cristler, John W., 2202 Fifth Ave.
Croft, Clarence C., Emsworth.
Cunningham, Daken W., Bessemer Building.
Curll, Clyde L., 99 Hazelwood Ave.
Curry, Glendon E., 820 Penn Ave.
Daggette, Alvin S., 400 South Craig St.
Davis, Frank M., 14 Lowrie St., Allegheny.
Davis, Lewis E., 4522 Forbes St.
Davis, Mase S., Diamond Bank Building.
Davis, Moore S., Park Building.
Davis, Thomas D., 261 Shady Ave.
Davis, William McC., 261 Shady Ave.
Davison, Robert E., 3617 Butler St.
Day, Ewing W., Westinghouse Building.
DeMuth, J. Smith, Crafton.
Dickie, E. S., 5504 Walnut St.
Dickinson, Breese M., 722 North Euclid Ave.
Dickson, Joseph Z., 820 Penn Ave.
Dickson, Robert W., Ferry and Broad Sts., Leetsdale.
Diller, Theodore, Westinghouse Building.
Dillinger, G. Arthur, Empire Building.
Diltz, Harry C., Pittsburg Life Building.
Disque, Thomas L., Pittsburg Life Building.
Donaldson, John S., 486 Lincoln Ave., Bellevue.
Donaldson, Walter F., 422 Sixth Ave.
Dornbush, Bertha E., 228 Amber St.
Dranga, Amelia A., Bijou Building.
Duffy, Ralph E., 302 N. Highland Ave.
Duncan, James A., 70 Seventeenth St.
Duncan, Joseph L., Arrott Building, Wood St. and Fourth Ave.

Dunn, James C., 524 Penn Ave.
Dutton, D. Forrest, Walkers Mills.
Easton, Andrew, 121 East Montgomery Ave., Allegheny.
Easton, John S., 524 Penn Ave.
Eaton, Paul, 813 Wood St., Wilkinsburg.
Eaton, Percival J., 131 North Highland Ave.
Edwards, James F., Bureau of Health.
Edwards, Ogden M., Jr., 5607 Fifth Ave.
Eicher, Charles G., 607 Chartiers Ave., McKees Rocks.
Elliott, Frederick B., 1008 Wylie Ave.
Ellis, Charles J., Sheridan and Penn Aves.
Elphinstone, J. Wade, 1329 Montgomery St., Allegheny.
Elterich, Theodore J., 522 Madison Ave., Allegheny.
Ely, George W., 7105 Frankstown Ave.
Emmerling, Charles, Rebecca and Liberty Sts.
Emmerling, Karl A., 476 Rebecca St.
Engle, Guy D., 638 Trenton Ave., Wilkinsburg.
English, William T., 321 Fifth Ave.
Erhard, Ernest L., Glassport.
Ertzman, Richard L., 119 Greenfield Ave.
Espy, John S., 4751 Liberty Ave.
Evans, Alice R., 318 Pittsburg Life Building.
Evans, David John, Atwood and Forbes Sts.
Evans, David R., 2712½ Carson St.
Evans, Edward E., 2715 Fifth Ave., McKeesport.
Evans, Roscoe, 134 Taggart St., Allegheny.
Everhart, James K., 3222 Forbes St.
Ewing, William B., Westinghouse Building.
Ewing, William H., Herron and Wylie Aves.
Eyman, William J., 1617 Penn Ave.
Faulkner, Richard B., 306 Diamond Bank Building.
Fenollosa, Sydney K., 4634 Fifth Ave.
Fife, S. John S., Bridgeville.
Fink, Harry M., Bessemer Building.
Fogleman, Adam P., Munhall.
Foster, Curtis S., 5822 Ellsworth Ave.
Foster, James T., 1015 Penn Ave.
Foster, Walter R., Crafton.
Foster, William C., 5909 Penn Ave.
Foster, William S., 252 Shady Ave.
Frank, Austin C., 138 Southern Ave., Mt. Oliver.
Frederick, William, Elliott Borough.
Frye, Daniel W., 4819 Second Ave.
Fulton, Henry D., 5149 Butler St.
Fundenberg, George B., 116 N. Highland Ave.
Gardiner, Francis G., 4919 Butler St.
Gaub, Otto C., 924 Westinghouse Building.
Gilliford, Robert H., 1600 Beaver Ave., Allegheny.
Glynn, William H., 2033 Center Ave.
Golden, John P., Georgetown, S. C.
Goldsmith, Luba Robin, 1321 Fifth Ave.
Goldsmith, Milton, 1323 Fifth Ave.
Goode, George H., Pittsburg Life Building.
Goodstone, Morris A., 919 Fifth Ave.
Gould, Margaret A., 714 Arch St., Allegheny.
Goulding, Charles O., 6202 Penn Ave.
Graff, Matthew A., 520 Broad St., Sewickley.
Gray, Earl P., Wilkinsburg.
Grayson, Thomas Wray, Westinghouse Bldg.
Green, John J., 6225 Penn Ave.
Greer, Martin N., 37 Lowrie St., Allegheny.
Groth, Herman, 824 Madison Ave., Allegheny.
Haben, John F., McKeesport.
Hagemann, John A., 7300 Race St.
Hager, Christian, Braddock.
Hall, Henry Martyn, Jr., 253 Shady Ave.
Hall, William T., 401 Lock St., Tarentum.
Hallock, William E., Fifth and Aiken Aves.
Hamilton, William R., 128 Ninth St.
Hampsey, Alexander R., 2410 Arlington Ave.
Hapgood, Lowrie P., 921 Carson St.
Hardie, Robert F., 522 Oakwood St.
Harting, Frederick A., Pittsburg Life Bldg.
Hawkins, John A., Pittsburg Life Building.
Haworth, Elwood B., 145 North Craig St.
Hayes, Charles H., 125 Hazelwood Ave.
Hayes, George L., 4704 Fifth Ave.
Hazzard, Thomas L., Bessemer Building.
Heard, James D., 6101 Penn Ave.
Hechelman, Herman W., 709 Washington Place, Allegheny.
Heck, Fred H., 1379 Lincoln Ave.
Heckel, Edward B., 524 Penn Ave.
Hegarty, John P., 818 Wylie Ave.
Henderson, Walter L., East McKeesport.
Henninger, Charles H., 334 S. Highland Ave.
Herron, Richard G., 128 Ninth St.
Hersman, Christopher C., Park Building.
Hesser, Andrew J., 4924 Liberty Ave.
Hickson, William J., 5173 Penn Ave.
Hierholzer, John C., 52 Cedar Ave., Allegheny.
Hiett, George W., Wilkinsburg.
Hill, Charles A., 159 Washington Ave., Allegheny.
Hill, Ralph L., 418 Washington St., Allegheny.
Hinchman, William A., 127 Fifth Ave., McKeesport.
Hirsch, Leon, 908 Cedar Ave., Allegheny.
Hitzrot, Henry W., McKeesport.
Hodkinson, William A., 128 Ninth St.
Hoffman, Joseph H., 111 Steuben St.
Holliday, George A., 606 Fulton Building
Holt, J. Floyd, 2449 Wylie Ave.
Hopkins, Alfred J., 6101 Penn Ave.
Hopkins, Herbert J., 6101 Penn Ave.
Hothman, B. H. DeV., Lincoln Ave.
Huffman, David C., Sixth and Walnut Sts., McKeesport.
Huggins, Raleigh R., Diamond Bank Building.
Hughes, Willet P., 5500 Center Ave.
Humphrey, Walter N., Sharpsburg.
Hunter, Andrew, 817 Fifth Ave., McKeesport.
Huselton, William S., Empire Building.
Hutchinson, Henry A., Dixmont.
Iland, Edward M., Coraopolis.
Ingram, Clarence H., 5517 Fifth Ave.
Ingram, W. Herbert, 1153 Murray Hill Ave.
Irish, William B., 127 North Highland Ave.
Jackson, Chevalier, Park Building.
Jackson, Daniel F., 201 Evaline St.
Jackson, Joseph M., 1401 Fifth Ave.
Jamison, Daniel I., 807 Liberty St., Allegheny.
Jamison, Hugh D., Empire Building.
Jarvis, Cecil C., 6007 Center Ave.
Jennings, Samuel D., Sewickley.
Johnson, T. D. Barton, 242 S. Highland Ave.
Johnston, George C., Bijou Building.
Johnston, James I., 203 South Craig St.

Jones, Clement R., 219 Sixth St.
Jones, Mary L., 260 Matilda St.
Jones, Matthew O., 251 Western Ave., Allegheny.
Jones, Russell R., Edgewood Park.
Jones, William A., Hope Church P. O.
Jones, William W., 940 Western Ave., Allegheny.
Kane, Clinton A., Forbes Building.
Kellogg, Frederick S., 6317 Station St.
Kelly George M., Westinghouse Building.
Kenworthy, Frank, Fortieth St. and Howley Ave.
Kerr, J. Purd, 2725 Carson St.
Kerr, Thomas R., Oakmont.
King, Cyrus B., 1007 Western Ave., Allegheny.
King, Isaac K., 230 Southern Ave.
King, S. Victor, 1001 Allegheny Ave., Allegheny.
Kirk, James A., Carrick.
Kirk, Thomas T., 4908 Liberty Ave.
Kirk, William H., 219 Sixth St.
Kneedler, G. Clyde, 1339 Fayette St., Allegheny.
Knorr, Lawrence R., 111 Steuben St.
Knox, William F., McKeesport.
Kocher, Quintin S., Gradatim.
Koeller, Ferdinand, 618 Roland St.
Koenig, Adolph, 1111 Westinghouse Building.
Kohberger, Henry P., 535 Larimer Ave.
Kroninberg, Isaac, 7048 Frankstown Ave.
Kuhns, Finley H., 490 Pittsburg Life Building.
Lange, J. Chris, Annex Hotel.
Lange, William J., 6200 Penn Ave.
Langfitt, William S., Bijou Building.
LeMoyne, Frank, 917 Bellefont St.
Lewin, Adolph L., 3703 Penn Ave.
Lichty, John A., 4634 Fifth Ave.
Linderman, Charles E., 7135 Hamilton Ave.
Lindsay, Charles S., 70 McClure St., Allegheny.
Linn, J. Madison, 7706 Edgewood Ave., Swissvale.
Lippincott, J. Aubrey, Arrott Building, Wood St. and Fourth Ave.
Litchfield, Lawrence, 5431 Fifth Ave.
Logan, Edward P., 1111 Arch St., Allegheny.
Long, Henry D., 414 Pittsburg Life Building.
Lyon, Alvin K., 413 North Ave., Millvale.
Lyon, William Reynolds, Glenfield.
McAboy, C. Bradford, 801 Homewood Ave.
McAdams, Robert J., 4818 Liberty Ave.
McAdams, William J., 501 Brushton Ave.
McCabe, Andrew M., 83 Arch St., Allegheny.
McCandless, J. Guy, 5436 Center Ave.
McCarrell James R., 1115 Bidwell St., Allegheny.
McCleary, William W., Bellevue.
McClure, James D., 436 Rebecca Ave., Wilkinsburg.
McClymonds, Horace S., Wilkinsburg.
McComb, Samuel Forbes, Tarentum.
McCombs, Willison H., 1603 Carson St.
McCorkle, W. P., Sheridanville.
McCormick, John C., 50 Shiloh St.
McCready, Edwin B., 242 S. Highland Ave.
McCready, Frank L., Sewickley.
McCready, James M., Sewickley.
McCready, Joseph A., R. F. D. 6, Meadville (Crawford Co.).
McCready, Robert J., 56 Chestnut St., Allegheny.
McCreight, William S., 609 Sandusky St., Allegheny.
McCune, Charles E., Second St., Buena Vista.
McCurdy, John R., 1401 Fifth Ave.
McCurdy, Stewart L., Pittsburg Life Building.
McDonald, Francis T., 801 Arch St., Allegheny.
McElroy, James C., West North Ave., Allegheny.
McGeagh, Albert C., 209 South Negley Ave.
McGeary, William J., R. F. D. No. 1, Sharpsburg.
McGrath, J. F., 1048 Fifth Ave.
McGraw, Edward B., 2010 Fifth Ave.
McGrew, Robert L., 52 Montgomery Ave., Allegheny.
McGuire, Hugh E., Pittsburg Life Building.
McKee, Joseph O., McKeesport.
McKelvy, James P., 518 North Highland Ave.
McKelvey, William H., 420 Sixth Ave.
McKenna, William B., 212 N. Highland Ave.
McKennan, James W., Washington (Washington Co.).
McKennan, Moore S., Forbes and Atwood Sts.
McKennan, Thomas M. T., Bessemer Building.
McKibben, Alpheus, 4729 Liberty Ave.
McKibben, Samuel H., 4062 Penn Ave.
McKinnon, Charles L., McKees Rocks.
McKnight, George S., 349 South Highland Ave.
McLenahan, Thomas M., Greenfield Ave.
McMaster, Gilbert C., Beechview.
McNaugher, Samuel N., Perrysville Ave., Allegheny.
McNeeley, John F., Munhall.
McNeil, George W., 6435 Frankstown Ave.
McQuaid, Joseph R., Leetsdale.
McWilliams, W. Milo, 3204 Boquet St.
Mabon, John S., Empire Building.
Macfarlane, James W., 820 Penn Ave.
MacFarland, William West, 106 North Highland Ave.
MacLachlan, Archibald A., 200 North Ave., West, Allegheny.
Macrum, Robert S., 531 Beaver Ave., Sewickley.
Magill, Arthur C., 4404 Penn Ave.
Manchester, Llewellyn C., 614 Kirkpatrick St.
Marren, Patrick J., 1501 Monterey St., Allegheny.
Marshall, Caroline S., 7139 Hamilton Ave.
Marshall, William N., Aspinwall.
Martin, Elizabeth, Smith Block.
Martin, Walton W., Main St. and Penn Ave.
Matheny, A. Ralston, 7032 Hamilton Ave.
Mathewson, Franklin W., Oakdale.
Mathiot, Edward B., Westinghouse Building.
Matlack, Frank H. Duquesne.
Matson, Eugene G., Bureau of Health.
Maxwell, Hugh S., Beechview.
Maxwell, Wilson W., 5177 Liberty Ave.
Mayer, Edward E., 524 Penn Ave.
Mechling, Curtis Campbell, 200 East North Ave., Allegheny.
Menzelora, M., 36 Chatham St.
Mercur, William H., Fifth Ave. and St. James St.

Meredith, C. Clyde, 1022 Park Building.
Meredith, Evan William, 423 S. Highland Ave.
Miller, Franklin B., Bessemer Building.
Miller, Harold A., 219 Sixth St.
Miller, James A., Braddock.
Miller, Laird O., 104 North Ave., Allegheny.
Miller, Oliver L., 221 North Ave., Allegheny.
Miller, Thomas A., Bellevue.
Miller, W. Newlon, 1907 Carson St.
Milligan, John D., 345 Fourth Ave.
Milligan, Robert, Westinghouse Building.
Milligan, Samuel C., Pittsburg Life Building.
Miner, Frank B., Perrysville.
Moore, Elizabeth S., 305 Shady Ave.
Montgomery, Ellis S., Pittsburg Life Building.
Montgomery, W. H., Pitcairn.
Morris, Alanson F. B., 6901 Hamilton Ave.
Morrison, Robert, 616 Fulton Building.
Morrow, H. Wilson, Swissvale.
Mossman, Beriah E., Jr., Greenville (Mercer Co.).
Mowry, William B., 8 East North Ave., Allegheny.
Moyer, Irwin J., 3525 Forbes St.
Mudie, William Gilmore, Liberty Bank Building, E. E.
Munford, John R., 5000 Penn Ave.
Murdoch, Frank H., Hotel Rider, Cambridge Springs (Crawford Co.).
Murdoch, J. Floyd, Hamilton Building.
Murray, Robert J., 42 Broad St., Sewickley.
Nason, F. Thoburn, McKeesport.
Nealon, William A., 4403 Penn Ave.
Neely, Elmer E., 1509 Pennsylvania Ave., Allegheny.
Neely, Frank, 3909 Perrysville Ave., Allegheny.
Neff, Edward L., Park Building.
Nettleton, DeWitt B., Sewickley.
Newlin, Harry S., McKeesport.
Nicholls, Robert Delmar, Glassport.
Norris, William J., 5144 Butler St.
O'Brien, William D., Hazelwood Ave.
Ogden, Zachariah B., 27 Wabash Ave.
Ohail, Joseph C., 23 West Montgomery Ave., Allegheny.
Ohlman, Isaac L., 1844 Fifth Ave.
Orr, Charles A., Crafton.
Osterloh, Charles T., 116 East North Ave., Allegheny.
Owens, Charles A., 1011 Wylie Ave.
Oyer, Harry W., 1416 Buena Vista St., Allegheny.
Palmer, Harold G., 100 Stockton Ave., Allegheny.
Patton, Elmer E., Ambridge.
Patterson, B. Howard, 255 Trenton Ave., Wilkinsburg.
Patterson, Stuart, 5604 Ellsworth Ave.
Patterson, Ellen James, 4700 Fifth Ave.
Pearson, Eugene O., 3412 Ward St.
Pershing, Frank S., 768 Penn Ave., Wilkinsburg.
Peterson, Albert A., Elizabeth.
Pettit, Albert, Westinghouse Bldg.
Phillips, Frank J., 2139 Wylie Ave.
Phillips, John S., 614 Chestnut St., Allegheny.
Pierce, A. M., West Elizabeth.
Pollock, William F., 1912 Carson St.
Pool, Stewart N., Lloyd Building, Penn and Sheridan Aves.
Poole, Richard E., Castle Shannon.
Porter, John, 203 Fifth Ave., McKeesport.
Post, Frank S., 5482 Penn Ave.
Potts, James A., 15 Shiloh St.
Price, Albert D., 127 Hazelwood Ave.
Price, Henry T., 926 Western Ave., Allegheny.
Price, Joseph H., DeHaven.
Purman, John, Eighth and West Sts., Homestead.
Pyle, W. T., 7479 McClure Ave., Swissvale.
Rall, George W., 250 Frankstown Ave.
Ralston, B. Stewart, Neville and Center Sts.
Ramsey, William Stewart, Coraopolis.
Rankin, Charles A., McKeesport.
Ray, William B., Glenshaw.
Reed, I. Bebout, Crafton.
Rex, Thomas A., Neville St. and Ellsworth Ave.
Reynolds, J. Harvey, Bellevue.
Rhine, Samuel B., 7026 Frankstown Ave.
Rhodes, Frederick A., 321 Fifth Ave.
Ribetti, Gaetano T., 66 Washington St.
Rigg, John E., Wilkinsburg.
Riggs, Elliott S., 58 Prospect Ave., Washington (Washington Co.).
Riggs, William J., 1442 Pennsylvania Ave., Allegheny.
Rinard, Charles C., Homestead.
Ritchey, John B., 420 West Main St., Denison, Texas.
Ritchie, M. Delmar, Empire Building.
Robinson, Wilton H., 404 Larimer Ave.
Robertson, Stewart, 11 Montgomery Ave., Allegheny.
Robeson, William F., 820 Penn Ave.
Roose, Arthur E., 711 Linden Ave., East Pittsburg.
Rowan, Charles, Etna.
Russell, John McD., 2908 Penn Ave.
Rugh, Wilson J., 109 Park Ave.
Ryall, Thomas M., 32 Wabash Ave.
Sadowski, Leon, 2625 Penn Ave.
Sahm, William K. T., Room 124 Union Station.
Sandels, Christopher C., Westinghouse Building.
Sandblad, Andrew G., 2301 Jenny Lind St., McKeesport.
Sanes, K. Isadore, Park Building.
Sankey, Thomas M., 701 Trenton Ave., Wilkinsburg.
Schaefer, Arthur P., 418 Madison Ave., Allegheny.
Schatzman, Edward, 718 First St., Allegheny.
Schildecker, Charles B., Park Building.
Schill, Joseph J., 3709 Butler St.
Schonfield, Moses, 1501 Carson St.
Schooley, A. Wiles, Braddock.
Schrack, Frank M., 2417 Carson St
Scott, Joel F., Wilson.
Scott, William, Woodville.
Seegman, Simon, 2012 Fifth Ave.
Seville, David Walter, 193 Lincoln Ave., Bellevue.
Shallcross, William G., 6117 Penn Ave.
Shanor, John D., 58 Chestnut St., Allegheny.
Shaw, James P., 1634 Fifth Ave.
Shaw, William C., 1009 Wylie Ave.
Sherman, William S. O., 6027 Penn Ave.
Shields, William H., 206 Shady Ave.

Shillito, George M., 710 Sandusky St., Allegheny.
Shillito, Nicholas G. L., 111 East Montgomery St., Allegheny.
Shrom, Laura G., Coraopolis.
Silver, David, Bessemer Building.
Silvey, John H., 1622 Main St., Sharpsburg.
Simonton, Thomas G., 611 Aiken Ave.
Simpson, Frank F., Bessemer Building.
Singley, John DeV., 812 North Highland Ave.
Small, Edward H., Negley and Penn Aves.
Smith, Lew W., 6024 Station St.
Smith, Stanley, 412 Bessemer Building.
Snively, Whitmore, 524 Penn Ave.
Snyder, William K. J., Avalon.
Soffel, August, 42 Shiloh St.
Sohn, Charles, 4902 Liberty Ave.
Speer, Alexander M., First National Bank Building, Wood St.
Spence, Jesse A., 211 Ninth St.
Spiro, Marcus, 101 Taggart St., Allegheny.
Srodes, James L., Woodville.
Stahlman, T. M., Room 1102 Westinghouse Building.
Stanton, Charles C., 1204 North Canal St., Sharpsburg.
Steim, Charles J., 4300 Butler St.
Steinmetz, Olive B., Eighth and Ann Sts., Homestead.
Sterrett, John K., Bijou Building.
Stewart, Acheson, 4715 Fifth Ave.
Stewart, John M., Homestead.
Stewart, R. Cameron M., 6309 Broad St.
Stewart, Robert W., 4715 Fifth Ave.
Stewart, Wylie J., Coraopolis.
Stieren, Edward, 3603 Fifth Ave.
Stillwagen, Charles A., 524 Penn Ave.
Stone, William L., Bijou Building.
Storer, Frank M., 811 Wood St., Wilkinsburg.
Stotler, Fulton R., 611 Penn Ave., Wilkinsburg.
Stover, Miles E., 1024 Rebecca St., Allegheny.
Straessly, Francis X., 82 Washington St., Allegheny.
Stuart, Emmert C., 5604 Penn Ave
Stuart, George E., 5169 Penn Ave.
Sturm, Samuel A., 119 Larimer Ave.
Stybr, C. J., 865 Liberty Ave., Allegheny
Sullivan, Patrick T., McKees Rocks.
Sumney, Frank F., Dravosburg.
Sunstein, Noah, McKeesport.
Swanton, Robert V., 1510 Penn Ave.
Swope, Lorenzo W., Park Building.
Taylor, Matilda O., 611 Broad St., Sewickley.
Taylor, Robert L., 4736 Friendship Ave.
Taylor, W. Van Metre, McKeesport.
Terheyden, William A., 5000 Liberty Ave.
Thomas, Vernon D., 7040 Frankstown Ave.
Thompson, J. Calvin, Bessemer Building.
Thorne, John M., 3510 Fifth Ave.
Tilbrook, John R., Pitcairn.
Todd, Frank L., 804 Sherman Ave., Allegheny.
Trevaskis, Abraham L., Turtle Creek.
Tufts, Stewart W., 6246 Station St.
Turfley, George G., 1534 Center Ave.
Turnbull, Thomas, Jr., 835 Western Ave., Allegheny.
Upham, Helen F., 319 Pittsburg Life Building.
VanHorn, Cornelius E., 6200 Penn Ave.
VanHorn, Thomas C., 6200 Penn Ave.
VanKirk, Theophilus R., McKeesport.
Vaux, Carey J., 526 Larimer Ave.
Vaux, George H., 2163 Center Ave.
Veeder, Andrew T., McClintock Building.
Vincent, James R., 5905 Penn Ave.
Voigt, Charles H., 500 West North Ave., Allegheny.
Wade, Frank H., West Chester, Mass.
Walker, Robert L., Carnegie.
Walker, Robert L., Jr., Carnegie.
Walker, William E., McKeesport.
Walker, William J., Homestead.
Walker, William K., Dixmont.
Wallace, William C., Ingram.
Wallis, Alfred W., 4807 Second Ave.
Walters, DeForest E., McKeesport.
Walters, John, Sewickley.
Walton, Louis Stockton, 43 Boggs Ave.
Watson, Adaline M., 6004 Penn Ave.
Watson, Charles M., 1316 Federal St., Allegheny.
Weber, William H., 1001 Carson St.
Wechsler, Benjamin B., 1608 Center Ave.
Weiss, Edward A., 524 Penn Ave.
Weisser, Edward A., 404 Empire Building.
Welch, John C., Bellevue.
Werder, Xavier O., 524 Penn Ave.
Wertheimer, Herbert G., Forbes and Halket Sts.
Wesley, William H., 359 South Highland Ave.
Wessels, John L., 711 Sandusky St., Allegheny.
Westervelt, Henry C., 6203 Stanton Ave.
Wholey, Cornelius C., 319 South Craig St.
Wible, Elmer E., Munhall.
Wiggins, Samuel L., McKeesport.
Willetts, Ernest W., 5101 Liberty Ave.
Willetts Joseph E., 820 Penn Ave.
Williams, John A., McKees Rocks.
Williams, Roger, 105 South Highland Ave.
Williamson, Joseph H., Bessemer Building.
Willock, John Scott, 414 West North Ave., Allegheny.
Wilson, John M., Highland and Center Aves.
Winters, George R., 112 Cohasset St.
Wirts, C. Wilmer, 1101 Madison Ave., Allegheny.
Wishart, Charles A., Bessemer Building.
Witherspoon, James, 104 Buena Vista St., Allegheny.
Wolf, Jacob, 1003 Western Ave., Allegheny.
Wood, Edward H., Riverside, Cal.
Woodward, William M., Fifth Ave., McKeesport.
Wright, James H., 1214 Buena Vista St., Allegheny.
Wycoff, George R., "The Maine," Cor. Detroit and Burley Sts., Lakewood, Ohio.
Wycoff, William A., 7202 Frankstown Ave.
Zeller, Albert T., McKeesport.
Zieg, John, Pittsburg Life Building.
Ziegler, Charles E., 407 South Highland Ave.
Zugsmith, Edwin, 107 Graham St.

ARMSTRONG COUNTY SOCIETY.

(Organized March 28, 1876.)

President. .Sharon P. Heilman, Kittanning.
V. Pres. . . .Robert P. Hunter, Leechburg.
Secretary. .Jay B. F. Wyant, Kittanning.

Treasurer. . Thomas M. Allison, Kittanning.
Reporter. . . Jay B. F. Wyant, Kittanning.
Censors. . . . Robert P. Hunter, Leechburg.
L. Dent Allison, Kittanning.
Charles A. Rodgers, Freeport.
John M. Reed, Ford City.
George S. Morrow, Dayton.
Com. on Pub.
Policy and
Legislation. Jay B. F. Wyant, Kittanning.
Albert E. Bower, Ford City.
James G. Allison, McCain.

Stated meetings at Dr. Monk's office, Kittanning, second Tuesday of each month. Election of officers in December.

MEMBERS (33).

Allison, James G., McCain.
Allison, L. Dent, Kittanning.
Allison, Thomas M., Kittanning.
Armstrong, John A., Leechburg.
Bower, Albert E., Ford City.
Campbell, O. Charles, Ford City.
Cooley, John M., Kittanning.
Clark, Omer C., Worthington.
Giarth, David I., Kittanning.
Hellman, Rena M., Leechburg.
Hellman, Sharon P., Kittanning.
Hetrick, Eleanor Jean, Kittanning.
Hunter, Robert P., Leechburg.
Jessop, Charles J., Kittanning.
Jessop, Samuel A. S., Kittanning.
Kelly, James A., Whitesburg.
Kuhns, Henry B., Neale.
McCafferty, William H., Freeport.
McLaughlin, Charles M., Freeport.
Monks, Frederick C., Kittanning.
Morrow, George S., Dayton.
Newcome, Thomas H., Adrian.
Painter, Alonzo P. N., Kittanning.
Powers, Henry K., Kittanning.
Reed, John M., Ford City.
Rodgers, Charles A., Freeport.
Ross, Marion L., Kaylor.
Schaffner, Boyd W., Templeton.
Steim, Joseph M., Kittanning.
Stockdill, Thomas F., Rural Valley.
Tarr, Robert F., Kittanning.
Walker, Robert A., Ford City, R. F. D. 1.
Wyant, Jay B. F., Kittanning.

BEAVER COUNTY SOCIETY.

(Organized November 23, 1855.)

President. . William W. Simpson, New Brighton.
V. Pres. . . . William C. Meanor, Beaver.
Joseph J. Scroggs, Beaver.
Secretary. . Boyd B. Snodgrass, Rochester.
Treasurer. . Paul G. McConnell, Beaver.
Reporter. . . Boyd B. Snodgrass, Rochester.
Censors. . . . Jefferson H. Wilson, Beaver.
George J. Boyd, Beaver Falls.
James K. White, New Brighton.
Com. on Pub.
Policy and
Legislation. George J. Boyd, Beaver Falls.
Jefferson H. Wilson, Beaver.
Ulysses S. Strouss, Beaver.

Stated meetings held in Hotel Speyerer, Rochester, on the second Thursday of each month at 8 P. M. Election of officers in January.

MEMBERS (46).

Allen, John J., Monaca.
Beitsch, William F., New Brighton.
Boal, G. Fay, Freedom.
Boal, George Y., Baden.
Bonzo, Charles R., Ambridge.
Boyd, George J., Beaver Falls.
Cloak, Andrew B., Freedom.
Coyle, Henry J., New Brighton.
Curry, William, Economy.
Davis, J. Howard, East Liverpool, Ohio.
Davis, John M., Darlington.
Dawson, Robert B., Esther.
Elder, James F., New Brighton.
Engle, Walter D., Aliquippa.
Gibson, Charles E., Rochester.
Iseman, Charles M., Elwood City (Lawrence Co.).
Langfitt, William J., 688 Preble Ave., Allegheny (Allegheny Co.).
Louthan, James S., Beaver Falls.
McCaskey, Francis H., Freedom.
McConnell, Paul G., Beaver.
Meanor, William C., Beaver.
Moore, Darius C., Monaca.
Nye, Hiram W., Enon Valley.
Patterson, Robert M., Beaver Falls.
Painter, Bert C., New Brighton.
Peirsol, Scudder H., Jr., Rochester.
Rose, Walter A., Rochester.
Sawyer, Benjamin C., Darlington.
Scroggs, Joseph J., Beaver.
Shugert, Guy S., Rochester.
Simpson, Spencer P., New Brighton.
Simpson, Theodore P., Beaver Falls.
Simpson, William C., New Brighton.
Simpson, William Winfield, New Brighton.
Snodgrass, Boyd B., Rochester.
Snodgrass, Bruce H., Beaver Falls.
Stevenson, John D., Aliquippa.
Strouss, Ulysses S., Beaver.
Sturgeon, Samuel D., New Galilee.
Taylor, Wm. J., East Liverpool, Ohio.
Torrens, Adelbert E., Conway.
Townsend, Leroy S., Beaver Falls.
White, James K., New Brighton.
Wickham, John J., Rochester.
Wilson, Jefferson H., Beaver.
Yolton, William C., Frankford Spring.

BEDFORD COUNTY SOCIETY.

(Organized July 29, 1904.)

President. . William P. S. Henry, Everett.
V. Pres. . . . Americus Enfield, Bedford.
Walter P. Trimbath, Everett.
Secretary. . Walter de la M. Hill, Everett.
Treasurer. . Edmund L. Smith, Schellburg.
Reporter. . . William E. Nycum, Osterburg.
Censors. . . . Simon H. Gump, Bedford.
William C. Miller, Bedford.
Benjamin F. Hunt, Clearville.
John A. Clark, Bedford.
Com. on Pub.
Policy and
Legislation. Americus Enfield, Bedford.
William C. Minnick, McKees Rocks.
Walter P. Trimbath, Everett.

Regular meetings second Tuesday of January, April, July, and October, in Bedford or in other places as may be determined by vote of the society. Election of officers in January.

MEMBERS (24).

Campbell, Frank S., Hopewell.
Clark, John A., Bedford.
Davis, Daniel Webster, Six Mile Run.
Dibert, Alvin C., Buffalo Mills.
Doyle, Charles F., Centerville.
Enfield, Americus, Bedford.
Enfield, Walter F., Bedford.
Evans, A. Hank, Saxton.
Gensimore, Charles W., New Enterprise.
Gump, Simon H., Bedford.
Hanks, Jason G., Breezewood.
Henry, William P. S., Everett.
Hill, Walter de la M., Everett.
Hunt, Benjamin F., Clearville.
Lindsay, James Washington, Imler.
Miller, Charles O., Saxton.
Miller, William C., Bedford.
Minnick, William C., McKees Rocks (Allegheny Co.).
Nycum, William E., Osterburg.
Price, James F., Six Mile Run.
Rohm, Uriah F., Hopewell.
Smith, Edmund L., Schellburg.
Statler, Samuel G., Alum Bank.
Trimbath, Walter P., Everett.

BERKS COUNTY SOCIETY.

(Organized 1824.)

(Reading is the P. O. when the street address only is given.)

President. . Irvin H. Hartman, 137 South Fourth St.
V. Pres. . . . George F. Potteiger, Hamburg.
John K. Seaman, 325½ North Ninth St.
Secretary. . William S. Bertolet, 233 North Sixth St.
Cor. Sec. . . Frank G. Runyeon, 1390 Perkeomen Ave.
Treasurer. . Samuel G. Burkholder, 613 Walnut St.
Reporter. . . S. Banks Taylor, 140 Oley St.
Librarian. . S. Banks Taylor, 140 Oley St.
Censors. . . . Israel Cleaver, 233 S. Fifth St.
S. G. Burkholder, 613 Walnut St.
Frank P. Lytle, Birdsboro.
John W. Kauffman, 814 North Eleventh St.
Trustees. . . John Y. Hoffman, 922 Penn St.
Charles W. Bachman, 140 North Ninth St.
James R. Gerhard, 540 Center Ave.
George Hetrich, Birdsboro.
Abraham S. Raudenbush, 116 S. Fourth St.
Com. on Pub. Policy and Legislation. Fremont W. Frankhauser, 230 South Sixth St.
John F. Feick, 643 N. Ninth St.
Daniel Longaker, 344 N. Fifth St.

Stated meetings at Medical Hall, Reading, the second Tuesday of each month, at 3 P. M. Election of officers in December.

MEMBERS (99).

Bachman, Charles W., 140 North Ninth St.
Beaver, Daniel B. D., 150 North Sixth St.
Becker, John N., 332 North Ninth St.
Berkey, Oswin W., Bally.
Bertolet, John M., 1333 Perkeomen Ave.
Bertolet, William S., 233 North Sixth St.
Bower, John L., 1333 Perkeomen Ave.
Brause, John M., Shartlesville.
Brobst, Edward J., West Leesport.
Buehler, William S., Wernersville.
Brunner, Frank R., Eshbach.
Buchanan, Thomas C., 117 South Fifth St.
Bucher, Hiester, 300 South Fifth St.
Burkholder, Samuel G., 613 Walnut St.
Cleaver, Israel, 233 South Fifth St.
Colletti, Ferdinando, 141 Penn St.
Dundor, Adam B., 118 South Fourth St.
Dundor, Frank P., Leesport.
Dunkelburger, Nathaniel Z., Kutztown.
East, Albert F., 1214 Spruce St.
Ermentrout, Samuel C., 1022 Penn St.
Fahrenbach, George, Bernville.
Feick, John F., 643 North Ninth St.
Feick, Lloyd H., 807 North Tenth St.
Fisher, William E., 159 West Buttonwood St.
Frankhauser, Fremont W., 230 S. Sixth St.
Gerhard, James R., 540 Center Ave.
Grim, David S., 230 North Fifth St.
Hartline, Charles H., Oley.
Hartman, Irvin H., 137 South Fourth St.
Hawman, Earle G., 13 South Tenth St.
Hengst, Milton A., Birdsboro.
Herbein, Oscar B., Strausstown.
Hertzog, C. Frank, Oley.
Hetrich, George, Birdsboro.
Hill, Samuel S., South Mountain.
Hoffman, John Y., 922 Penn St.
Hunsberger, William E., Maiden Creek.
Huyett, M. Luther, Shillington.
Kauffman, John W., 814 North Eleventh St.
Kehl, George W., 418 North Tenth St.
Keiser, Clara S., 36 North Tenth St.
Koch, Morris H., Lyons.
Kunkle, Oscar F., Lenhartsville.
Kurtz, Clarence M., 304 South Fifth St.
Kurtz, J. Ellis, 22 South Fifth St.
Kurtz, Samuel L., 412 South Fifth St.
LeFevre, Rufus E., 138 South Eighth St.
Livingood, William W., 122 Oley St.
Longaker, Daniel, 344 North Fifth St.
Loose, Charles G., 120 North Fifth St.
Lytle, Frank P., Birdsboro.
Maderia, James D., 247 North Fifth St.
Matternes James G., Centerport.
Matthews, James M., 138 North Eighth St.
Muhlenberg, William F., 34 South Fifth St.
Meter, Edward G., 47 North Ninth St.
Newcomet, Isaac W., Stouchsburg.
Overholser, George W., 309 North Ninth St.
Potteiger, Jonathan B., Hamburg.
Potteiger, George F., Hamburg.
Raudenbush, Abraham S., 116 S. Fourth St.
Reeser, Howard S., 111 South Fifth St.

Reber, Conrad Samuel, West Reading.
Rentschler, Harry F., 228 North Sixth St.
Rhode, Homer J., 152 North Sixth St.
Rigg, Samuel B., 220 South Fifth St.
Roland, Charles, 105 South Fifth St.
Rowe, Ross B., Front and Douglass Sts.
Runyeon, Frank G., 1390 Perkeomen Ave.
Saul, Henry W., Kutztown.
Schaeffer, Edwin D., 317 South Sixth St.
Schlemm, Horace E., 248 North Tenth St.
Schmehl, Seymour T., 114 North Tenth St.
Seaman, John K., 325½ North Ninth St.
Seidel, Albert N., 824 North Tenth St.
Seyler, Edwin Y., 1127 Greenwich St.
Shearer, Christopher H., 206 North Fifth St.
Shearer, James Y., Sinking Springs.
Shearer, Wayne L., 632 Schuylkill Ave.
Shenk, George B., 116 South Ninth St.
Shoemaker, Ira G., 19 South Ninth St.
Stamm, Allison A., Mohn's Store.
Stryker, Harry D., 132 North Fifth St.
Stump, A. F. Marshall, 148 North Sixth St.
Taylor, S. Banks, 140 Oley St.
Thompson, Oan J., 233 North Ninth St.
Vinton, Charles Harrod, Wernersville.
Wagner, Levi F., 959 North Ninth St.
Wagner, John R., Hamburg.
Wahl, John H., 327 West Oley St.
Wanner, Abram K., 1119 North Ninth St.
Weber, Raymond K., 1108 North Eleventh St.
Wenger, Milton Leroy, 1029 North Ninth St.
Wenrich, George G., Wernersville.
Werley, Charles D., Topton.
Wickert, Victor W., 1009 Penn St.
Yeakel, Isaac B., Bally.
Ziegler, John George, 927 Franklin St.

BLAIR COUNTY SOCIETY.

(Organized July 25, 1848.)

President. . W. Albert Nason, Roaring Springs.
V. Pres. . . . Thomas M. Morrow, Altoona.
Henry L. Hartzell, Altoona.
Secretary. . John D. Hogue, Altoona.
Treasurer. . William S. Ross, Altoona.
Reporter. . . Frank A. Ford, Altoona.
Censors. . . . John Fay, Altoona.
Charles Long, Altoona.
James E. Smith, Altoona.
Com. on Pub. Policy and Legislation. Samuel L. McCarthy, Altoona.
William S. Ross, Altoona.
Davis A. Hogue, Altoona.

Stated meetings held monthly in Common Council Chambers, City Hall, Altoona. Extra meetings are termed scientific meetings, their purpose being the reading and discussion of papers, all business matters being excluded.

MEMBERS (72).

Allen, David E., Altoona.
Arnold, James F., Williamsburg.
Beck, William Frank, Altoona.
Blose, Joseph U., Altoona.
Bloomhardt, Fred H., Altoona.
Bonebreak, John S., Martinsburg.
Brotherlin, Henry H., Hollidaysburg.
Brubaker, John L., Kipple.
Brumbaugh, Arthur S., Altoona.
Burket, George W., Tyrone.
Christy, Francis M., Altoona.
Christy, Robert W., Hollidaysburg.
Closson, Caleb H., Altoona.
Confer, D. Clarence, Duncansville.
Cunningham, H. B., Juniata.
Delaney, Charles Walter, Altoona.
Detrich, H. R., Williamsburg.
Duff, E. M., Hollidaysburg.
Eldon, Roswell T., Altoona.
Eldon, William McK., Roaring Springs.
Ernest, Jacob E., Williamsburg.
Fay, John, Altoona.
Fetter, Eugene C., Altoona.
Findley, Joseph D., Altoona.
Ford, Frank A., Altoona.
Fulkerson, Benjamin J., Tyrone.
Glover, Samuel P., Altoona.
Hartzell, Henry L., Altoona.
Hillis, Robert J., Kipple.
Hogue, Davis A., Altoona.
Hogue, John D., Altoona.
Howell, William H., Altoona.
Ickes, George A., Altoona.
Isenburg, Joseph L., Williamsburg.
Irwin, Robert C., Hollidaysburg.
Keagy, Frank, Altoona.
Kephart, Thomas A. C., Altoona.
Leatherman, Daniel I., Williamsburg.
Long, Charles, Altoona.
Lowrie, William L., Tyrone.
McBurney, Charles F., Altoona.
McCarthy, Samuel L., Altoona.
McCarthy, S. Lloyd, Jr., Altoona.
McConnell, Charles W., Altoona.
Maglaughlin, William K., Altoona.
Miller, Christian C., Altoona.
Miller, Edwin B., Altoona.
Miller, Homer C., Altoona.
Miller, Proctor T., Altoona.
Morrow, Thomas M., Altoona.
Morrow, William H., Bellwood.
Musser, Walter F., Tyrone.
Myers, Ernest R., Hollidaysburg.
Nason, John B., Tyrone.
Nason, W. Albert, Roaring Springs.
Neal, Thomas F., Hollidaysburg.
Neff, Elmer E., Altoona.
Nowell, Mary E., Altoona.
Oburn, Albert S., Altoona.
Powley, Joseph E., Altoona.
Robinson, C. E., Altoona.
Ross, William S., Altoona.
Shaffer, Orr H., Altoona.
Sheedy, John M., Altoona.
Shoemaker, F. R., Hollidaysburg.
Smith, George W., Hollidaysburg.
Smith, Horace R., Altoona.
Smith, James E., Altoona.
Smith, Samuel Calvin, Hollidaysburg.
Stayer, Andrew S., Altoona.
Tate, George F., Altoona.
Wilson, Thomas T., Bellwood.

BRADFORD COUNTY SOCIETY.

(Organized September 20, 1849.)

President. . Harry Spaulding Fish, Sayre.
V. Pres. . . . Martin E. Herrmann, Dushore.
Gustavus Conklin, Orwell.
Secretary. . Charles M. Woodburn, Towanda.

Treasurer. . Francis Chaffee, Towanda.
Librarian. . Edward D. Payne, Towanda.
Reporter. . . Charles M. Woodburn, Towanda.
Censors. . . . George H. B. Terry, Wyalusing.
Ernest N. Shepard, Burlington.
C. Manville Pratt, Towanda.
Cyrus Lee Stevens, Athens.
Com. on Pub.
Policy and
Legislation . Charles H. Ott, Sayre.
Cyrus Lee Stevens, Athens.
Skiles M. Woodburn, Towanda.

Stated meetings on second Tuesday of each month at 1:30 P. M., in the Court House, Towanda, unless otherwise ordered. Election of officers in January.

MEMBERS (43).

Badger, Samuel W., Athens.
Barker, Perley N., Troy.
Bird, Arthur J., Overton.
Campbell, William R., East Smithfield.
Chaffee, Francis, Towanda.
Claggett, William L., Rummerfield.
Conklin, Gustavus, Orwell.
Coughlin, Alfred G., Athens.
Cummings, Charles J., Sayre.
Denison, Lewis B., Sayre.
Durga, Gideon W., LeRaysville.
Everitt, John E., Sayre.
Fish, Harry Spaulding, Sayre.
Glover, Harry A., Windham.
Harshberger, W. Frank, New Albany.
Herrmann, Martin E., Dushore (Sullivan Co.).
Holcomb, John T., Athens.
Hunter, Marcus C., Sayre.
Johnson, Thomas B., Towanda.
Johnson, Thomas B., Jr., Towanda.
Kingsley, Harry O., Ricketts.
Lee, John C., Herrickville.
Means, Charles S., 349 South 51st St., Philadelphia (Philadelphia Co.).
Moody, Horace M., East Smithfield.
Murray, Albert H., Sayre.
Newton, Frederick G., Towanda.
Ott, Charles H., Sayre.
Payne, Edward D., Towanda.
Phillips, John W., Troy.
Pratt, C. Manville, Towanda.
Randall, William F., Dushore (Sullivan Co.).
Reed, Charles, Wysox.
Rice, Fred W., Rome.
Rinebold, Nathan A., Athens.
Shepard, Ernest N., Burlington.
Stevens, Cyrus Lee, Athens.
Terry, George H. B., Wyalusing.
Thompson, Ferdinand A., Durell.
Tracy, Elijah G., Troy.
Woodburn, Charles M., Towanda.
Woodburn, Skiles M., Towanda.
Woodhead, H. Irving, Forksville (Sullivan Co.).
Wright, Theodore, Sayre.

BUCKS COUNTY SOCIETY.

(Organized June 14, 1848. Reorganized October 31, 1863.)

President. . John B. Carrell, Hatboro.
V. Pres. . . . James I. Cawley, Springtown.
Charles B. Smith, Newtown.
Secretary. . Anthony F. Myers, Blooming Glen.
Treasurer. . Anthony F. Myers, Blooming Glen.
Reporter. . . Anthony F. Myers, Blooming Glen.
Censors. . . . Alfred E. Fretz, Sellersville.
George M. Grim, Ottsville.
William R. Cooper, Point Pleasant.
Com. on Pub.
Policy and
Legislation . Anthony F. Myers, Blooming Glen.
George M. Grim, Ottsville.
James N. Richards, Fallsington.

Stated meetings at Newtown the second Wednesday in February; at Bristol the second Wednesday in May; at Quakertown the second Wednesday in August; and at Doylestown the second Wednesday in November. Election of officers in November.

MEMBERS (69).

Althouse, Albert C., Dublin.
Bacon, John, Andalusia.
Bassett, Henry Linn, Yardley.
Biehn, Andrew C., Richland Center.
Borzell, Francis F., Cressman.
Boyle, Morris P., Glenside (Montgomery Co.).
Brown, Walter H., Richlandtown.
Burkhardt, Charles N., Blooming Glen.
Carrell, John B., Hatboro (Montgomery Co.).
Cawley, James I., Springtown.
Coburn, E. Stevens, Plumsteadville.
Cooper, William R., Point Pleasant.
Crewett, John A., Newtown.
Crowe, James, Huntingdon Valley (Montgomery Co.).
Erdman, William S., Buckingham.
Erdman, Wilson S., Richlandtown.
Eves, Curtis Clyde, George School.
Fell, John A., Doylestown.
Fleckinstine, Horace, Newportville.
Foulke, Richard C., Newhope.
Fretz, Alfred E., Sellersville.
Fretz, Oliver H., Quakertown.
Fretz, S. Edward, Denver (Lancaster Co.).
Gabrielian, Mugurdich C., Pipersville.
Grim, George M., Ottsville.
Groff, James E., Doylestown.
Groom, Evan J., Bristol.
Hannum, William, Hatboro (Montgomery Co.).
Hellyer, Howard A., Penn's Park.
Johnson, Erwin T., Hilltown.
Johnson, Henry W., Rieglesville.
Kerns, Samuel P., 1432 Diamond St., Philadelphia (Philadelphia Co.).
Kunsman, William H., Morrisville.
LeCompte, William C., Bristol.
Leinbach, Samuel A., Quakertown.
Lovett, Henry, Langhorne.
Martin, William, Bristol.
Meschter, Eugene F., Altoona (Blair Co.).
Milhatten, Samuel Patterson, Ivyland.
Murphy, Felix A., Doylestown.
Myers, Anthony F., Blooming Glen.
Nonamaker, Noah S., Bedminster.
O'Connell, Austin, Bucksville.

Osborne, Richard H. G., Morrisville.
Ott, John J., Pleasant Valley.
Parker, George A., Southampton.
Plymire, I. Swartz, Doylestown.
Pownall, Elmer E., Richboro.
Pursell, Howard, Bristol.
Rice, Newton S., Durham.
Richards, James N., Fallsington.
Scott, J. Ernest, Newhope.
Seibert, William K., Plumsteadville.
Slack, Julia H., Bristol.
Smith, Charles B., Newtown.
Stroup, George H., Eddington.
Swartzlander, Frank, Doylestown.
Swartzlander, Frank B., Doylestown.
Swartzlander, Joseph R., Forest Grove.
Thomas, Harry L., Langhorne.
Thomas, Joseph, Quakertown.
Vissel, Julius T., Perkasie.
Walter, Joseph B., Solebury.
Walter, J. Willis, Point Pleasant.
Walton, Levi S., Jenkintown (Montgomery Co.).
Wareham, Arthur, Yardley.
Weinberger, Nelson Shelly, Quakertown.
Wilson, Abram S., Bristol.
Winder, William G., 1504 Spruce St., Philadelphia (Philadelphia Co.).

BUTLER COUNTY SOCIETY.

(Organized January 3, 1867.)

President. . Robert B. Greer, Butler.
V. Pres. . . . L. Leo Doane, Butler.
Henderson J. Neely, Butler.
Secretary. . Thomas McC. Maxwell, Butler.
Treasurer. . M. Edward Headland, Butler.
Reporter. . . Robert S. Lowry, Butler.
Censors. . . . Raymond H. Pillow, Butler.
William B. Clark, Butler.
Albert Holman, McCandless.
Com. on Pub. Policy and Legislation. William B. Clark, Butler.
Harvey D. Hockenberry, West Sunbury.
Raymond H. Pillow, Butler.

Stated meetings in K. of P. Hall, Reiber Building, Butler, the second Tuesday in January, March, May, July, September and November. Election of officers in January.

MEMBERS (44).

Atwell, J. Clinton, Butler.
Boyle, James C., Butler.
Campbell, Willard B., Harrisville.
Christie, James L., Connoquenessing.
Clark, William B., Butler.
Cowden, John V., Butler.
Cowden, William R., Butler.
Davis, Adam C., Creighton (Allegheny Co.).
DeWolf, Charles L., Chicora.
DeWolf, Willard L., Butler.
Doane, L. Leo, Butler.
Dombart, Nicholas A., Evans City.
Edmonds, Andrew J., Bruin.
Elrick, Robert B., Petrolia.
Greer, Robert B., Butler.
Grossman, Robert J., Butler.
Grove, Leon V., R. F. D. 50, West Sunbury.
Harris, Edward H., Butler.
Hazlett, Leslie R., Butler.
Headland, M. Edward, Butler.
Heilman, Arthur M., Butler.
Hockenberry, Harvey D., West Sunbury.
Hockenberry, W. Rush, Slippery Rock.
Holman, Albert, McCandless.
Hoover, Nicholas M., Butler.
Lasher, Weston W., Saxonburg.
Lowry, Robert S., Butler.
McConnell, Walker W., Harrisville.
McKee, Thomas H., Chicora.
Mathiott, George H., Mars.
Maxwell, Thomas McCullough, Butler.
Neely, Henderson J., Butler.
Nevman, Abraham M., Butler.
Patterson, Walter S., Butler.
Pillow, Raymond H., Butler.
Ralston, Samuel E., Zelienople.
Stackpole, Roy L., Butler.
Sterrett, Samuel O., Downieville.
Thomas, George D., Chicora.
Thomas, Victor F., Evans City.
Thompson, James B., Prospect.
Thompson, Raymond A., Butler.
Wasson, Elgie L., Butler.
Wilson, Harry M., Evans City.

CAMBRIA COUNTY SOCIETY.

(Organized 1852. Reorganized 1868 and 1882.)

President. . William S. Wheeling, Spangler.
V. Pres. . . . Clarence B. Millhoff, Johnstown.
Arthur F. Stotts, Ehrenfeld.
Secretary. . Harry J. Cartin, Johnstown.
Treasurer. . Francis Schill, Sr., Johnstown.
Reporter. . . Harry J. Cartin, Johnstown.
Censors. . . . William E. Matthews, Johnstown.
Harry Somerville, Chest Springs.
Frank B. Statler, Johnstown.
Com. on Pub. Policy and Legislation. George W. Wagoner, Johnstown.
Arthur F. Stotts, Ehrenfeld.
Fremont C. Jones, Ebensburg.

Stated meetings every second Thursday in the month, at Johnstown. Officers elected in December and installed in January.

MEMBERS (70).

Akers, Andrew Franklin, Gallitzin.
Anderson, Guy R., Barnesboro.
Barker, Olin G. A., Johnstown.
Barr, John W., Nanty Glo.
Blaisdell, Irving C., Wilmore.
Born, Charles E., Johnstown.
Burkhart, Ephraim J., Johnstown.
Carlisle, Henry Lorain, Windber (Somerset Co.).
Cartin, Harry J., Johnstown.
Comerer, Jacob Alvin, Vintondale.
Detrick, Frank A., Cresson.
Dowler, William I., Patton.
Dunsmore, Albert F., Barnesboro.
Ferguson, Frank U., Gallitzin.
Fichtner, Alhon S., Johnstown.
Fisher, Daniel E., Lilly.
Fitzgerald, Clyde A., South Fork.
Glass, Joseph H., South Fork.
Griffith, Harvey M., East Conemaugh.
Haight, William D., Johnstown.

Hannan, Charles E., Johnstown.
Harris, Clarence M., Johnstown.
Hawes, John W., Windber (Somerset Co.).
Hay, George, Johnstown.
Helfrick, Orlando J., Spangler.
Horowitz, Max, Johnstown.
Jefferson, James, Johnstown.
Jones, Emlyn, Johnstown.
Jones, Fremont C., Ebensburg.
Jones, Leighton Wherry, Johnstown.
Kaucher, Clifford I., Ashtola (Somerset Co.).
Koontz, James S., Johnstown.
Kress, Frederick C., Lilly.
Kring, Sylvester S., Johnstown.
Longwell, Benton Elkins, Johnstown.
Lowman, John Bodine, Johnstown.
Lubken, William Oscar, Johnstown.
Lynch, James A., Cresson.
McAneny, John B., Johnstown.
MacDonald, George F., Gallitzin.
Matthews, William E., Johnstown.
Mayer, Louis H., Johnstown.
Meek, Eloise, Johnstown.
Miller, Edward L., Johnstown.
Miller, Joseph S., Barnesboro.
Millhoff, Clarence B., Johnstown.
Murray, Valesius A., Patton.
Nickel, Harry G., Johnstown.
Porch, George B., Johnstown.
Pringle, William N., Johnstown.
Reed, Marvin Warren, South Fork.
Rice, Daniel S., Hastings.
Sagerson, John Leo, Johnstown.
Schill, Francis, Jr., Johnstown.
Schill, Francis, Sr., Johnstown.
Shank, Orlando J., Windber (Somerset Co.).
Sheridan, John C., Johnstown.
Shires, B. Frank, Patton.
Sloan, Ira E., Johnstown.
Sloan, George H., Carrolltown.
Somerville, Harry, Chest Springs.
Statler, Frank B., Johnstown.
Stotts, Arthur F., Ehrenfeld.
Tomb, Henson F., Johnstown.
Van Wert, John Irving, Patton.
Wagoner, George W., Johnstown.
Wakefield, Alfred N., Johnstown.
Watkins, Arthur A., St. Benedict.
Wheeling, William S., Spangler.
Woodruff, John B., Johnstown.

CARBON COUNTY SOCIETY.

(Organized April 20, 1881.)

President. . Clinton J. Kistler, Lehighton.
V. Pres. . . . Alden D. Catterson, Palmerton.
Secretary. . James B. Tweedle, Weatherly.
Treasurer. . James B. Tweedle, Weatherly.
Reporter. . . James B. Tweedle, Weatherly.
Censors. . . . William H. Clewell, Summit Hill.
Wilson P. Long, Weatherly.
William Worrall Reber, Lehighton.
Com. on Pub.
Policy and
Legislation. Jacob G. Zern, Lehighton.
Edwin H. Kistler, Lansford.

Stated meetings at Mauch Chunk the third Thursday of April and October. Election of officers in April.

MEMBERS (17).

Balliet, Calvin J., Lehighton.
Behler, Jacob H., Nesquehoning.
Catterson, Alden D., Palmerton.
Clewell, William H., Summit Hill.
Hill, George P., Lansford.
Horn, Charles T., Lehighton.
Keiser, Phaon D., Lehighton, R. F. D. 1.
Kistler, Clinton J., Lehighton.
Kistler, Edwin H., Lansford.
Kramer, James C., Aquashicola.
Kutz, Wilson L., Weissport.
Long, Wilson P., Weatherly.
Moyer, Louis W., Mauch Chunk.
Reber, William Worrall, Lehighton.
Smith, Lawrence H., Hazleton (Luzerne Co.).
Tweedle, James B., Weatherly.
Zern, Jacob G., Lehighton.

CENTER COUNTY SOCIETY.

(Organized April 4, 1876.)

President. . Theodore S. Christ, State College.
V. Pres. . . . David Dale, Bellefonte.
Robert G. H. Hayes, Bellefonte.
Secretary. . Jared Y. Dale, Lemont.
Treasurer. . George F. Harris, Bellefonte.
Reporter. . . Jared Y. Dale, Lemont.
Censors. . . . James L. Seibert, Bellefonte.
Walter J. Kurtz, Howard.
Wilson W. Feidt, Bellefonte.
Com. on Pub.
Policy and
Legislation. Wilson W. Feidt, Bellefonte.
David Dale, Bellefonte.
James L. Seibert, Bellefonte.

Stated meeting the second Tuesday of each month in the Court House, Bellefonte. Election of officers in January.

MEMBERS (28).

Allison, John R. G., Center Hall.
Andrews, Warren W., Philipsburg.
Braucht, Harvey S., Spring Mills.
Bright, John W., Rebersburg.
Brockerhoff, Joseph M., Bellefonte.
Christ, Theodore S., State College.
Coons, Samuel G., Stormstown.
Dale, David, Bellefonte.
Dale, Jared Y., Lemont.
Dorworth, Edward Samuel, Bellefonte.
Feidt, Wilson Wellington, Bellefonte.
Frank, George S., Millheim.
Hardenbergh, John A., Millheim.
Harris, George F., Bellefonte.
Hayes, Robert G. H., Bellefonte.
Henderson, William B., Philipsburg.
Huff, Scott M., Milesburg.
Irwin, William U., Fleming.
Kurtz, Walter J., Howard.
McEntire, Oscar W., Howard.
Musser, C. Sumner, Aaronsburg.
Robison, John I., State College.
Russell, Edward A., Fleming.
Schad, Edith H., Bellefonte.
Sebring, John, Bellefonte.
Seibert, James L., Bellefonte.
Thompson, James A., Port Matilda.
Woods, George H., Pine Grove Mills.

CHESTER COUNTY SOCIETY.

(Organized February 5, 1828.)

President. .Charles E. Woodward, West Chester.
V. Pres. . . .Clarence S. Kurtz, Malvern.
George R. Spratt, Coatesville.
Secretary. .S. Horace Scott, Coatesville.
Treasurer. .Mary H. Smith, Parkesburg.
Reporter. . .Howard Y. Pennell, East Downingtown.
Censors. . . .Edward Kerr, East Downingtown.
Charles E. Woodward, West Chester.
Erasmus V. Swing, Coatesville.
Com. on Pub. Policy and Legislation. Edward Kerr, East Downingtown.
Joseph Hemphill, Jr., West Chester.

Stated meetings on the second Tuesday of January, May and September at Chester County Hospital, West Chester; second Tuesday of March, July and September at Coatesville. Election of officers in January.

MEMBERS (62).

Baker, Frederick L., Atglen.
Baker, Jane R., Embreeville.
Baugh, A. Wayne, Paoli.
Bringhurst, Joseph, West Chester.
Carey, Robert B., Glenlock.
Carmichael, Arthur W., Coatesville.
Catanach, Notman G., West Chester.
Doran, Charles F., Phoenixville.
Emack, Frank D., Phoenixville.
Emery, William H., Coatesville.
Evans, John K., Malvern.
Eves, James S., New London.
Ewing, William B., West Grove.
Farrell, John A., West Chester.
Fulton, James, New London.
Gifford, U. Grant, Avondale.
Graves, Everett A., Coatesville.
Hadfield, Edward J., Phoenixville.
Hemphill, Joseph, Jr., West Chester.
Hoskins, Percy C., West Chester.
Hutchinson, D. Edgar, East Downingtown.
Kerr, Edward, East Downingtown.
Kirk, Lewis H., Oxford.
Kurtz, Clarence S., Malvern.
Lutz, Hiram L., 5727 Woodland Ave., Philadelphia (Philadelphia Co.).
Mackey, David, Lewisville.
Massey, Frank, Marshallton.
Maxwell, James R., Parkesburg.
Miller, J. Craig, Lincoln University.
Morris, Hanna, West Chester.
Murphy, Walter A., Parkesburg.
Nickel, J. Edward, Glen Moore.
Osborne, Albert E., 3232 Key West St., Los Angeles, Cal.
Patrick, Elwood, West Chester.
Pennell, Howard Y., East Downingtown.
Perdue, William R., Unionville.
Reel, Ida V., Coatesville.
Rettew, David P., Coatesville.
Reynolds, Conrad S., Kennett Square.
Richmond, Thomas S., Guthrieville.
Roberts, Charles J., Paoli.
Roberts, J. Benton, Llanarck (Delaware Co.).
Rothrock, Harry A., West Chester.
Rothrock, Joseph T., West Chester.
Scattergood, Joseph, West Chester.
Scott, J. Clifford, Oakbourne.
Scott, S. Horace, Coatesville.
Sharpless, William T., West Chester.
Smith, Mary H., Parkesburg.
Spratt, George R., Coatesville.
Stevenson, Louisa F., West Chester.
Swing, Erasmus V., Coatesville.
Taylor, James T., Pomeroy.
Taylor, Jackson, Coatesville.
Thomas, John G., Newtown Square (Delaware Co.).
Thompson, Benjamin, Landenburg.
Treichler, C. Galen, Honeybrook.
Wagner, Andrew F., Downey, Cal.
Walker, James, Hamorton.
Weeks, Albert, Phoenixville.
Williams, Hiram T., West Chester.
Woodward, Charles E., West Chester.

CLARION COUNTY SOCIETY.

(Organized May 5, 1865.)

President. .John B. Miller, Sligo.
V. Pres. . . .John M. Fitzgerald, Clarion.
Secretary. .John F. Summerville, Monroe.
Treasurer. .William M. Clover, Knox.
Reporter. . .Robert A. Walker, West Monterey.
Censors. . . .Cuvier L. Clover, Knox.
Albert J. Hepler, New Bethlehem.
Com. on Pub. Policy and Legislation. William M. Clover, Knox.
John F. Summerville, Monroe.
Robert A. Walker, West Monterey.

Stated meetings at selected places the fourth Tuesday in April, July and October. Annual meeting at Clarion, the fourth Tuesday of January.

MEMBERS (26).

Beck, Frank W., Venus.
Brown, James A., New Kensington (Westmoreland Co.).
Burguin, Charles W., Parkers Landing (Armstrong Co.).
Clover, Cuvier L., Knox.
Clover, William M., Knox.
Dillenbeck, Charles O., Strattonville.
Dinger, Reuben E., Hawthorn.
Fitzgerald, John M., Clarion.
Greer, Robert J., East Brady.
Hepler, Albert J., New Bethlehem.
Hess, Henry N., Fryburg.
Hoffman, Charles W., Rimersburg.
Hoover, Albert M., Parkers Landing (Armstrong Co.).
Meals, Nelson M., Callensburg.
Miller, John B., Sligo.
Rimer, John T., Clarion.
Smith, Howard S., 217 Plane St., Newark, N. J.
Spencer, Robert L., Sligo.
Stute, John E., Parkers Landing (Armstrong Co.).
Summerville, Harvey Bruce, Rimersburg.
Summerville, John F., Monroe.
Walker, Robert A., West Monterey.
Wallace, Robert S., East Brady.
Wallace, Wilbur S., East Brady.
Wilson, Benjamin G., Clarion.
Woods, George B., Curllsville.

CLEARFIELD COUNTY SOCIETY.

(Organized September 27, 1864. Chartered May 8, 1894.)

President. . William B. Henderson, Philipsburg.
V. Pres. . . . Harry A. Woodside, Lumber City.
Secretary. . Charles E. McGirk, Philipsburg.
Treasurer. . Charles E McGirk, Philipsburg.
Reporter. . . Charles E. McGirk, Philipsburg.
Censors. . . . Summerfield J. Miller, Madera.
Luther W. Quinn, DuBois.
Samuel J. Waterworth, Clearfield.
Com. on Pub. Policy and Legislation. James L. Henderson, Osceola Mills.
Wm. B. Henderson, Philipsburg.
J. Frank Rowles, Mahaffey.
Samuel C. Stewart, Clearfield.
Charles E. McGirk, Philipsburg.

Stated meetings the second Thursday of each month at 10 A. M. and 1:30 P. M., every other meeting to be held in Clearfield, the remaining six to be divided between Osceola, Houtzdale, Philipsburg and Curwensville. Election of officers in December.

MEMBERS (53).

Ake, Nicholas K., Curwensville.
Baily, Samuel D., Clearfield.
Bennett, Ash D., Mahaffey.
Bennett, Francis G., Clearfield.
Brockbank, John I., DuBois.
Browne, William C., Burnside.
Buckingham, Hugh W., Mahaffey.
Buzard, Albert M., Kylertown.
Carlin, Robert G., Philipsburg (Center Co.).
Collins, Howard A., Morrisdale Mines.
Currier, Jonathan, Grampian.
Dale, John, Philipsburg (Center Co.).
Dale, Wallace H., Houtzdale.
Edwards, Girard B., Clearfield.
Flegal, Irwin S., Karthaus.
Glasgow, George M., Glen Campbell (Indiana Co.).
Gordon, John, Clearfield.
Harman, L. Cooper, Philipsburg (Center Co.).
Harper, Francis W., Irvona.
Hayes, Senes E., Byrnedale (Elk Co.).
Henderson, James L., Osceola Mills.
Henderson, William B., Philipsburg (Center Co.).
Hill, Albert H., Ramey.
Hurd, Michael E., La Jose.
Hyskell, William D., Madera.
Irwin, George R., Clearfield.
Jenkins, George C., Curwensville.
King, Hiram O., Curwensville.
Kirk, George B., Kylertown.
Leipold, Bert E., Clearfield.
McGirk, Charles E., Philipsburg (Center Co.).
McNaul, C. Gleni, Glen Richie.
Miller, James A., Grampian.
Miller, Summerfield J., Madera.
Park, Milo E., Westover.
Park, William C., New Millport.
Purnell, Howard G., Ansonville.
Quigley, John M., Shawville.
Quinn, Luther W., DuBois.
Read, Frederick B., Osceola Mills.
Rowles, J. Frank, Mahaffey.
Rowles, L. C., Grampian.
Spackman, James P., Peale.
Stewart, Samuel C., Clearfield.
Sweier, William A., Pennfield.
Thompson, Harry H., Windburne.
Todd, Fernandez, Houtzdale.
Waterworth, Samuel J., Clearfield.
Weidemann, Frank H., Morrisdale Mines
Wilson, Harry Sheridan, Smoke Run.
Wilson, Ward O., Clearfield.
Woodside, Harry A., Lumber City.
Yeaney, Gillespie B., Clearfield.

CLINTON COUNTY SOCIETY.

(Organized 1866. Reorganized 1883.)

President. . Saylor J. McGhee, Mill Hall.
V. Pres. . . . Joseph M. Corson, Chatham Run.
Secretary. . Robert B. Watson, Lock Haven.
Treasurer. . George D. Green, Lock Haven.
Reporter. . . Robert B. Watson, Lock Haven.
Censors. . . . Francis P. Ball, Lock Haven.
John M. Dumm, Mackeyville.
Allen B. Painter, Mill Hall.
Com. on Pub. Policy and Legislation. Robert B. Watson, Lock Haven.
Richard Armstrong, Lock Haven.

Stated meetings at Lock Haven Hospital, the third Friday of each month at 2 P. M. Election of officers in January.

MEMBERS (15).

Armstrong, Richard, Lock Haven.
Armstrong, William N., Lock Haven.
Ball, Francis P., Lock Haven.
Corson, Joseph M., Chatham Run.
Dumm, John M., Mackeyville.
Fullmer, Charles C., Renova.
Gilmore, John K., Renova.
Green, George D., Lock Haven.
Holloway, Luther M., Salona.
Huston, Joseph H., Clintondale.
McGhee, Saylor J., Mill Hall.
Mervine, Graydon D., Bitumen.
Painter, Allen B., Mill Hall.
Roach, Thomas E., Renova.
Watson, Robert B., Lock Haven.

COLUMBIA COUNTY SOCIETY.

(Organized June 31, 1858.)

President. . Edward L. Davis, Berwick.
V. Pres. . . . Delbert M. Hess, Rohrsburg.
Ralph E. Miller, Bloomsburg.
Secretary. . James R. Montgomery, Bloomsburg.
Treasurer. . James R. Montgomery, Bloomsburg.
Reporter. . . Luther B. Kline, Catawissa.
Librarian. . John W. Bruner, Bloomsburg.
Censors. . . . J. Jordan Brown, Bloomsburg.
Samuel B. Arment, Bloomsburg.
Luther B. Kline, Catawissa.
Com. on Pub. Policy and Legislation. Luther B. Kline, Catawissa.
John W. Bruner, Bloomsburg.
Edward L. Davis, Berwick.

Stated meetings at Bloomsburg second Tuesday in March, June, September and December; at Berwick second Tuesday in February, May, August and November; at Catawissa second Tuesday in January, April, July and October. Election of officers in December.

MEMBERS (29).

Altmiller, Charles F., Bloomsburg.
Arment, Samuel B., Bloomsburg.
Bowman, John H., Berwick.
Brown, J. Jordan, Bloomsburg.
Bruner, John W., Bloomsburg.
Christian, Howard S., Millville.
Davis, Edward L., Berwick.
Davis, Reuben O., West Berwick.
Follmer, J. Brooks, Berwick.
Hensyl, William C., Berwick.
Hess, Delbert M., Rohrsburg.
Hill, Frank P., Berwick.
Hower, Heister V., Mifflinville.
John, J. Stacey, Bloomsburg.
Kline, Luther B., Catawissa.
McCrea, Alexander B., Berwick.
Miller, Ralph E., Bloomsburg.
Montgomery, James R., Bloomsburg.
Pfahler, J. Fred, Berwick.
Reagan, George L., Berwick.
Redeker, Frederick W., Bloomsburg.
Rhoads, John, Numidia.
Sharpless, Benjamin F., Catawissa.
Shuman, Ambrose, Catawissa.
Shuman, J. Elmer, Jerseytown.
Steck, Charles T., Berwick.
Vance, William T., Berwick.
Vastine, J. Marion, Catawissa.
Wintersteen, John C., Numidia.

CRAWFORD COUNTY SOCIETY.

(Organized 1867.)

President..A. Wilber Clouse, Geneva.
V. Pres....Charles K. Ferer, Meadville.
Robert W. Clark, Venango.
Secretary..Cornelius C. Laffer, Meadville.
Treasurer..Cornelius C. Laffer, Meadville.
Reporter...Cornelius C. Laffer, Meadville.
Censors....John K. Roberts, Meadville.
Isaac N. Taylor, Meadville.
Charles F. Daubenspeck, Cochranton.
Com. on Pub. Policy and Legislation. Winters D. Hamaker, Meadville.
Watson W. Little, Mosiertown.
Sylvester F. Hazen, Hartstown.

Stated meetings in Meadville the first Wednesday of January, March, May, July, September and November. Election of officers in January.

MEMBERS (34).

Best, M. Blanch, Meadville.
Brittain, William C., Cochranton.
Brush, Harry L., Conneaut Lake.
Carpenter, Mead C., Linesville.
Clark, Robert W., Venango.
Clouse, A. Wilber, Geneva.
Cooper, Joshua M., Meadville.
Daniels, Henry M., Woodcock.
Daubenspeck, Charles F., Cochranton.
Dennis, Alfred L., Conneautville.
Ely, William, Beaver Center.
Ferer, Charles K., Meadville.
Gamble, William M., Little Cooley.
Gamble, R. Bruce, Meadville.
Gray, M. Dwight, Cambridge Springs.
Greenfield, Robert N., Penn Line.
Hamaker, Winters D., Meadville.
Hazen, Sylvester F., Hartstown.
Hill, Clarence C., Meadville.
Humphrey, Glennis E., Cambridge Springs.
Jackson, Oliver H., Conneaut Lake.
Johnson, William M., Venango.
Laffer, Cornelius C., Meadville.
Little, Watson W., Mosiertown.
Mosier, J. Russell, Meadville.
Quay, William H., Jr., Townville.
Roberts, John K., Meadville.
Rose, Susan F., Port Huron, Michigan.
Rouche, William H., Guy's Mills.
Smith, Rodney S., Saegertown.
Snodgrass, David G., Meadville.
Taylor, Isaac N., Meadville.
William, Clyde L., Harmonsburg.
Young, Frank D., Cambridge Springs.

CUMBERLAND COUNTY SOCIETY.

(Organized July 17, 1866.)

President..T. Wallbank Preston, Balfour.
V. Pres....Henry Rhea Douglas, Newville.
R. McMurran Shepler, Carlisle.
Secretary..Hildegarde H. Langsdorf, Carlisle.
Asst. Sec..Edward R. Plank, Carlisle.
Treasurer..John W. Bowman, Lemoyne.
Reporter...Hildegarde H. Langsdorf, Carlisle.
Censors....T. Wallbank Preston, Balfour.
Henry Rhea Douglas, Newville.
Hildegarde H. Langsdorf, Carlisle.
R. McMurran Shepler, Carlisle.
John W. Bowman, Lemoyne.
Edward R. Plank, Carlisle.
Com. on Pub. Policy and Legislation. James Evelyn Pilcher, Carlisle.
Americus R. Allen, Carlisle.
John J. Koser, Shippensburg.

Stated meetings second Tuesday of January, at Carlisle. Other meetings determined by vote of society or by invitation. Election of officers in January.

MEMBERS (46).

Allen, Americus R., Carlisle.
Arthur, Walter C., Newville.
Bashore, Harvey B., West Fairview.
Berry, Edward S., Shippensburg.
Bishop, S. Snively, Harrisburg (Dauphin Co.).
Bowman, John W., Lemoyne.
Boyd, John M., Walnut Bottom.
Daugherty, Milton M., Mechanicsburg.
Davis, Joseph C., Carlisle.
Deemy, C. P., Mechanicsburg.
Diven, Samuel L., Carlisle.
Douglas, Henry Rhea, Newville.
Drawbaugh, Jacob H., Shiremanstown.
Emrick, Benjamin F., Carlisle.
Good, John F., New Cumberland.
Hamacher, John K., Mechanicsburg.

Heminger, George, Carlisle.
Hudson, Elmer A., West Fairview.
Irwin, George G., Mt. Holly Springs.
Koons, Philip R., Mechanicsburg.
Kisner, J. C., Carlisle.
Koser, John J., Shippensburg.
Langsdorf, Hildegarde H., Carlisle.
Lefever, Enos K., Boiling Springs.
Linebaugh, Henry M., New Cumberland.
Long, Robert P., Mechanicsburg.
Longsdorf, Harold H., Dickinson.
McCreary, J. Bruce, Shippensburg.
Moulton, Arthur Bertram, Camp Hill.
Mowery, Samuel E., Lisburn.
Neely, Edgar C., Newville.
Phillipy, William B., Carlisle.
Pilcher, James Evelyn, Carlisle.
Plank, Edward R., Carlisle.
Preston, T. Wallbank, Balfour.
Rodgers, John R., Carlisle, R. F. D., No. 1.
Shepler, R. McMurran, Carlisle.
Shively, James B., Shippensburg.
Shoemaker, Ferdinand, Carlisle Indian School.
Smith, Henry Albert, Mechanicsburg.
Spangler, Harry A., Carlisle.
Stem, James C., Lemoyne.
Stewart, Thomas, Carlisle.
Sutliff, S. Dana, Shippensburg.
Van Camp, David W., Plainfield.
Zimmerman, George L., Carlisle.

DAUPHIN COUNTY SOCIETY.

(Organized 1868.)

(Harrisburg is the P. O. when street address only is given.)

President. .Charles E. L. Keene, 1849 Berryhill St.
V. Pres. . . .J. Warren Roop, 427 Boas St.
John C. DeVenney, 1115 North Second St.
Secretary. .Clarence R. Phillips, 1646 North Third St.
Treasurer. .Frank D. Kilgore, 2021 North Sixth St.
Reporter. . .Charles M. Rickert, 718 North Sixth St.
Trustee. . . .Charles A. Rahter, 110 North Second St.
Censors. . . .John F. Culp, 211 Locust St.
Paul A. Hartman, 514 N. Third St.
John W. Ellenberger, 922 North Third St.
Com. on Pub. Policy and Legislation. John W. Ellenberger, 922 North Third St.
David S. Funk, 300 N. Second St.
William H. Seibert, Steelton.
Hiram McGowan, 236 State St.
John B. McAlister, 234 North Third St.

Stated meetings for business second Tuesday in January, third Tuesday in April, August and November; and scientific meetings first Tuesday of each month except July, August and September, at the Academy of Medicine, Harrisburg. Election of officers in January.

MEMBERS (77).

Bauder, George W., 229 North Second St.
Bishop, William Thomas, York (York Co.).
Blair, Thomas S., 403 North Second St.
Blacher, John F., Middletown.
Coble, Aaron C., Dauphin.
Cocklin, Charles C., 28 North Third St.
Coover, Frederick W., 214 North Second St.
Culp, John F., 211 Locust St.
Davies, William T., 268 North St.
Deckard, Percy E., 413 Market St.
DeVenney, John C., 1115 North Second St.
Douglass, William T., 1154 Derry St.
Duff, William L., 930 North Sixth St.
Ellenberger, John Wesley, 922 N. Third St.
Fager, John H., 120 Walnut St.
Fager, V. Hummel, 410 North Second St.
Farnsler, H. Hershey, 1426 Market St.
Fishel, Henry W., 216 South Thirteenth St.
Fritchey, John A., 902 North Third St.
Funk, David S., 300 North Second St.
George, H. W., Middletown.
Gillette, Claude W., 45 North Thirteenth St.
Goodman, Charlotte E., State Hospital.
Graber, Leon K., 926 North Third St.
Hamilton, Hugh, 315 Walnut St.
Hartman, Paul A., 514 North Third St.
Hassler, Samuel F., 22 North Fourth St.
Hetrick, David Joseph, 54 N. Thirteenth St.
James, E. Harold, 608 North Third St.
James, William T., 1900 North Sixth St.
Jeffers, Benjamin B., Steelton.
Keene, Charles E. L., 1849 Berryhill St.
Kilgore, Frank D., 2021 North Sixth St.
Kunkel, George B., 204 Walnut St.
Laverty, DeWitt C., Middletown.
Lehr, Monroe D., Lykens.
McAlister, John B., 234 North Third St.
McGowan, Hiram, 236 State St.
Manning, Charles J., 1519 North Sixth St.
Middleton, William J., Steelton.
Miller, David I., 1627 West Sixth St.
Miller, J. Harvey, 18 North Fourth St.
Mish, George F., Middletown.
Myers, Hewitt C., Steelton.
Nead, Daniel W., 3322 Spencer Terrace, Philadelphia (Philadelphia Co.).
Newman, Oscar A., 619 Race St.
Oenslager, John, Jr., 711 North Third St.
Orth, Henry L., State Hospital.
Park, J. Walter, 32 North Second St.
Peters, Jacob M., Steelton.
Phillips, Clarence R., 1646 N. Third St.
Plank, John R., Steelton.
Putt, Maurice O., Oberlin.
Rahter, Charles A., 110 North Second St.
Rebuck, Charles S., 410 North Third St.
Rickert, Charles M., 718 North Sixth St.
Roop, J. Warren, 427 Boas St.
Saul, Charles H., Steelton.
Seibert, William H., Steelton.
Sherger, John A., 1939 North Sixth St.
Shope, Elias L., 1700 North Second St.
Shope, Jacob W., 25 South Twelfth St.
Shope, Samuel Z., 1642 North Third St.
Smith, Harvey F., 713 North Third St.
Stevens, John C., 230 South Thirteenth St.
Stites, George M., Williamstown.

Sweiler, Robert D., 1323 Derry St.
Traver, David B., Steelton.
Traver, Samuel N., Steelton.
Trullinger, Charles I., 2112 North Sixth St.
Walter, Henry B., 1317 North Third St.
West, William H., 1801 Green St.
Widder, George H., 1249 Derry St.
Willetts, Theodore L., 114 Chestnut St.
Wintersteen, Grace, State Hospital.
Wolford, Martin L., 328 Chestnut St.
Wright, William E., State Hospital.

DELAWARE COUNTY SOCIETY.

(Organized May 30, 1850.)

President. .Jonathan L. Forwood, Chester.
V. Pres. . . .Franklin J. Evans, Chester.
Secretary. .Linnaeus Fussell, Media.
Asst. Sec. .Charles I. Stiteler, Chester.
Treasurer. .Daniel W. Jefferis, Chester.
Reporter. . .Ellen E. Brown, Chester.
Librarians. Samuel Trimble, Newtown Square.
Amy White, Chester.
Censors. . . .J. Harvey Fronfield, Media.
Fred H. Evans, Chester.
L. Haines Crothers, Chester.
Com. on Pub.
Policy and
Legislation. Robert S. Maison, Chester.
Jonathan L. Forwood, Chester.
Daniel W. Jefferis, Chester.

Stated meetings the first Thursday of each month at places selected. Election of officers in January.

MEMBERS (61).

Baker, Frances N., Media.
Bing, Edward W., Chester.
Bird, William, Chester.
Brown, Ellen E., Chester.
Bryant, F. Otis, Chester.
Buck, W. Penn, Lansdowne.
Crothers, L. Haines, Chester.
Crothers, Samuel Ross, Chester.
Davis, Frank Thomas, Lansdowne.
Dickeson, Morton P., Media.
Dickeson, William T. W., Media.
Easby, Alice Rogers, Media.
Elgin, William F., Glenolden.
Evans, Franklin J., Chester.
Evans, Fred H., Chester.
Evans, William Knowles, Chester.
Forwood, Jonathan Larkin, Chester.
Fronfield, J. Harvey, Media.
Fussell, Linnaeus, Media.
Gallager, Harry, Glenolden.
Gleim, George, Lansdowne.
Gottschalk, Leon, Chester.
Green, Mary V. M., Swarthmore.
Hamilton, Frank L., Chester.
Harbridge, D. Forest, Chester.
Hitchens, Arthur P., Glenolden.
Hoopman, Sylvester V., Chester.
Horning, Henry, 603 West Seventh St., Chester.
Howell, Elizabeth W., Chester.
Jefferis, Daniel W., Chester.
Johnston, Frank, Moores.
Kalbach, Isaac I., R. F. D. 2, Media.
LaShelle, Charles L., Lenni Mills.
Lehman, William F., Chester.
Lincoln, Clarence, Wayne.
Loughead, Raymond B., 2403 West Third St. Chester.
Loughlin, James E., Norwood.
Makuen, G. Hudson, 1627 Walnut St., Philadelphia (Philadelphia Co.).
McCool, Joseph L., Marcus Hook.
Maison, Robert S., Chester.
Miller, Elizabeth K., Ridley Park.
Morton, Alexander R., Morton.
Morton, George D., Prospect Park.
Neufeld, Maurice A., Chester.
Partridge, Conrad L., Ridley Park.
Postles, David, Chester.
Pyle, Jerome L., Gradyville.
Risley, J. Norman, 1728 Chestnut St., Philadelphia (Philadelphia Co.).
Roxby, John Byers, Swarthmore.
Schoff, Charles H., Media.
Stanton, Herbert C., Clifton Heights.
Stellwagen, Thomas C., Media.
Stellwagen, Thomas C., Jr., 1121 Spruce St., Philadelphia (Philadelphia Co.).
Shortledge, Charles B., Lima.
Stiteler, Charles I., Chester.
Taylor, Horace F., Ridley Park.
Trimble, Samuel, Newtown Square.
Ulrich, Katharine, Chester.
White, Amy, Chester.
Yawger, Nathan S., Clifton Heights.

ELK COUNTY SOCIETY.

(Organized 1881.)

President. .James G. Flynn, Ridgway.
V. Pres. . . .Peter Wilson Leitzell, Portland Mills.
Michael M. Rankin, Ridgway.
Secretary. .Russell P. Heilman, Brockwayville.
Treasurer. .Alfred Mullhaupt, St. Marys.
Reporter. . .John Craig McAllister, Ridgway.
Censors. . . .Peter Wilson Leitzell, Portland Mills.
Michael M. Rankin, Ridgway.
Russell P. Heilman, Brockwayville.
Com. on Pub.
Policy and
Legislation. Walter L. Williams, Ridgway.
Clarence G. Wilson, St. Marys.
Vander K. Corbett, Driftwood.

Stated meetings in Ridgway the second Thursday of each month, commencing in January. Election of officers in January.

MEMBERS (34).

Bardwell, Eugene O., Emporium (Cameron Co.).
Bavier, Arthur B., Ridgway.
Beale, Bertram A., Driftwood (Cameron Co.).
Black, Walter M., St. Marys.
Bush, Walter H., Emporium (Cameron Co.).
Corbett, Vander K., Driftwood (Cameron Co.).
Davis, Arthur F., St. Marys.
DeLong, William H., Emporium (Cameron Co.).
Earley, Francis G., Ridgway.
Flynn, James G., Ridgway.

Groves, Daniel Chester, Brockwayville (Jefferson Co.).
Hyskell, W. E., Wilcox.
Hall, George B., Brockport.
Hayes, Leo Z., Force.
Heilman, Russell P., Brockwayville (Jefferson Co.).
Humphries, Frank R., Dagus Mines.
Leitzell, Peter Wilson, Portland Mills.
Livingston, Elmer E., Johnsonburg.
McFarlane, J. P., Sinnamahoning (Cameron Co.).
McAllister, John Craig, Ridgway.
Mullhaupt, Alfred, St. Marys.
Neff, Charles C., St. Marys.
Palmer, William R., Johnsonburg.
Rankin, Michael M., Ridgway.
Russ, Eben J., St. Marys.
Rutherford, James E., Straight.
Sharp, Eugene B., Johnsonburg.
Smith, Henry H., Johnsonburg.
Smith, Sylvester S., Emporium (Cameron Co.).
Scott, Clinton H., St. Marys.
Warnick, John W., Johnsonburg.
Wells, James H., Wilcox.
Williams, Walter L., Ridgway.
Wilson, Clarence G., St. Marys.

ERIE COUNTY SOCIETY.

(Reorganized June 25, 1895.)

(Erie is the P. O. when street address only is given.)

President. . George S. Ray, 201 W. Eighth St.
V. Pres. . . . Richard O. Miller, 420 West Eighth St.
Secretary. . Fred E. Ross, 2012 Peach St.
Treasurer. . George A. Reed, 2113 Peach St.
Reporter. . . George W. Schlindwein, 133 West Ninth St.
Librarian. . David N. Dennis, 221 W. Ninth St.
Censors. . . . Owen M. Shreve, Eighth & Sassafras Sts.
David H. Strickland, Seventh and Sassafras Sts.
George B. Kalb, 226 W. Eighth St.
Peter Barkey, 130 West Ninth St.
Guy C. Boughton, 124 West Seventh St.
Com. on Pub. Policy and Legislation. Elmer G. Weibel, 504 West 18th St.
Ira J. Dunn, 810 Peach St.
George B. Kalb, 226 W. Eighth St.
George S. Ray, 201 W. Eighth St.
Fred E. Ross, 2012 Peach St.

Stated meetings in the Library Building, Erie, the first Tuesday of each month, at 8:30 P. M. Election of officers in January.

MEMBERS (59).

Ackerman, John, 9 West Eleventh St.
Andrews, William K., Mill Village.
Barkey, Peter, 130 West Ninth St.
Barney, Elford R., Wattsburg.
Battles, Raymond W., West Millcreek.
Bell, John J., 22 East Eighth St.
Boughton, Guy C., 124 West Seventh St.
Brown, Dean S., 149 West Eighth St.
Chidester, Charles B., 219 W. Eighteenth St.
Dasher, J. Howard, 928 E. Sixth St.
Dennis, David N., 221 West Ninth St.
Dickinson, George S., 143 West Ninth St.
Douville, Jeffrey C., North East.
Duff, Richard H., Girard.
Dunn, Ira J., 810 Peach St.
Elston, Gabriel A., Corry.
Gillespie, Martin S., Edinboro.
Goeltz, Francis A., 205 West Eighth St.
Hall, Friend L., 262 West Eighteenth St.
Heard, Corydon F., North East.
Heard, James L., North East.
Humphrey, William J., Union City.
Hunter, Wallace R., 802 Peach St.
Kalb, George B., 226 West Eighth St.
Kern, Rudolph A., 715 Peach St.
Kendall, Eugene E., Waterford.
Krum, Astley G., 163 West Eighteenth St.
Lefever, Clarence H., 507 West Eleventh St.
Logan, Orlando, Girard.
McCuaig, John E., 238 West Eighth St.
Miller, Richard O., 420 West Eighth St.
Montgomery, James H., 230 West Tenth St.
O'Dea, Charles A., 151 East Fifth St.
Palmer, Walter W., 132 West Ninth St.
Peters, Joel M., Albion.
Putnam, Burton H., North East.
Rastatter, Paul F., 359 East Tenth St.
Ray, George S., 201 West Eighth St.
Reed, George A., 2113 Peach St.
Reinoehl, David V., 731 French St.
Rockwell, LeRue D., Union City.
Ross, Fred E., 2012 Peach St.
Roth, Augustus H., 232 W. Eighth St.
Schlindwein, George W., 133 West Ninth St.
Schmelter, John W., 813 Sassafras St.
Schrade, Anna M., 434 East Sixth St.
Sherwood, Alfred C., Union City.
Sherwood, Andrew J., Union City.
Shreve, Owen M., Eighth and Sassafras Sts.
Silliman, James E., 137 West Eighth St.
Smith, A. Lewis, Corry.
Stranahan, Chester W., 140 West Eighth St.
Strickland, Charles G., Seventh and Sassafras Sts.
Strickland, David H., Seventh and Sassafras Sts.
Studebaker, George M., 426 East Tenth St.
Walsh, Frank A., 128 East Seventh St.
Weibel, Elmer G., 504 West Eighteenth St.
Woods, Adella B., 715 French St.
Wright, John W., 13 East Eighth St.

FAYETTE COUNTY SOCIETY.

(Organized May 18, 1869.)

President. . Lee M. Sprowls, Uledi.
V. Pres. . . . Clark M. Luman, Uniontown.
Secretary. . Jacob S. Hackney, Uniontown.
Asst. Sec. . Owen R. Altman, Uniontown.
Treasurer. . Jacob S. Hackney, Uniontown.
Reporter. . . Owen R. Altman, Uniontown.
Censors. . . . John A. Batton, Uniontown.
Harry J. Bell, Dawson.
Thomas H. White, Connellsville.

Com. on Pub.
Policy and
Legislation. Levi S. Gaddis, Uniontown.
Thomas H. White, Connellsville.
Harry J. Bell, Dawson.

Stated meetings first Tuesday in January, March, May, July, September and November. The meetings of January, May and September will be held in Uniontown. The meetings of March, July and November to be held alternately in Connellsville and Brownsville.

MEMBERS (83).

Adams, Charles W., Uniontown.
Altman, Owen R., Uniontown.
Atkinson, Henry F., Connellsville.
Bailey, William J., Connellsville.
Baker, Hugh, Leisenring.
Batton, John A., Uniontown.
Baum, Simon H., Uniontown.
Bell, Harry J., Dawson.
Bryant, Charles P., Pittsburg (Allegheny Co.).
Cloud, Milton H., Masontown.
Cochran, James L., Star Junction.
Colborn, Andrew J., Connellsville.
Coll, Hugh J., Connellsville.
Colley, Brown, Dunbar.
Cox, James D., New Salem.
Crosbie, George T., Fayette City.
Crow, Arthur E., Uniontown.
Davidson, John H., Perryopolis.
Duff, Alexander McG., Merrittstown.
Eastman, Thomas N., Uniontown.
Echard, Thomas B., Connellsville.
Edie, Elliott, New Haven.
English, Bailey J., Perryopolis.
English, Henry J., Grindstone.
Evans, George O., Uniontown.
Ewing, James B., Uniontown.
Gaddis, Levi S., Uniontown.
Gallagher, George W., New Haven.
Gordon, John W., Belle Vernon.
Gribble, Russell T., Fairchance.
Griffith, Dayne H., Connellsville.
Guiher, Horace B., Smithfield.
Hackney, Jacob S., Uniontown.
Hagan, Arthur S., Brier Hill.
Hazlett, Jesse H., Vanderbilt.
Hibbs, Samuel E., Fairchance.
Holbert, James F., Fairchance.
Hoover, Freeman S., Brownsville.
Hopwood, William H., Smock.
Jackson, John D., Connellsville.
Kerr, John E., Belle Vernon.
LaClair, Charles H., Uniontown.
Larkin, Peter A., Uniontown.
Lilley, Wilbur M., Brownsville.
Lowman, Norman Bert, Belle Vernon.
Luman, Clark M., Uniontown.
McClenathan, John C., Connellsville.
McCormick, Louis P., Connellsville.
McKee, Robert S., New Haven.
McKinney, D. F., Dunbar.
Marston, Albion N., Belle Vernon.
Meacham, John J., Masontown.
Means, William H., Percy.
Martin, William C., Fairchance.
Mellinger, Kirby Smith, New Salem.
Messmore, Walter T., Smithfield.
Miller, Colley J., Brownsville.
Myers, H. P., Markleysburg.
Neff, George W., Masontown.
Noon, Milton A., Everson.
O'Neil, Andrew, Uniontown.
Osborn, Wilkins William, Upper Middletown.
Parshall, James W., Uniontown.
Quinn, L., Fayette City.
Rasely, Edwin R., Uniontown.
Rebok, Harry Edward, Upper Middletown.
Reichard, Cyrus C., Brownsville.
Reichard, Lewis N., Brownsville.
Sangston, D. Hibbs, McClellandtown.
Sangston, James H., McClellandtown.
Sangston, James P., McClellandtown.
Shupe, Mersellows B., Connellsville.
Smith, Alfred C., Brownsville.
Smith, Charles H., Uniontown.
Smith, Peter Franklin, Uniontown.
Sprowls, Lee M., Uledi.
Sturgeon, John D., Uniontown.
Taylor, Frank H., Uniontown.
Van Voorhis, John S., Belle Vernon.
Wagoner, LeRoy C., Brownsville.
Warne, William Wilbur, Dunbar.
White, Thomas H., Connellsville.
Zimmerman, Randall, Wilmerding (Allegheny Co.).

FRANKLIN COUNTY SOCIETY.

(Organized January 24, 1825.)

President. . John W. Croft, Waynesboro.
V. Pres. . . . Guy P. Asper, Chambersburg.
James H. Swan, St. Thomas.
Secretary. . John J. Coffman, Scotland.
Asst. Sec. . H. Clay Devilbiss, Chambersburg.
Treasurer. . David Maclay, Chambersburg.
Censors. . . . P. Brough Montgomery, 1 year, Chambersburg.
Theodore H. Weagly, 2 years, Marion.
Henry X. Bonebrake, 3 years, Chambersburg.
Com. on Pub.
Policy and
Legislation. David Maclay, Chambersburg.
Abram H. Strickler, Waynesboro.
Theodore H. Weagly, Marion.

Stated meetings in the Library Rooms, Chambersburg, third Tuesday of January, April, July, and October. Election of officers in January.

MEMBERS (54).

Alexander, Randall McG., Fannettsburg.
Amberson, James Burns, Waynesboro.
Asper, Guy P., Chambersburg.
Bonebrake, Henry X., Chambersburg.
Brosius, William H., Mont Alto.
Brubaker, Granville M., Mercersburg.
Bushey, Franklin A., Greencastle.
Coffman, John J., Scotland.
Croft, John W., Waynesboro.
Devilbiss, H. Clay, Chambersburg.
Devor, John H., Chambersburg.
Emmert, Frank N., Chambersburg.
Fritz, Horace M., Quincy.
Gelwix, John M., Chambersburg.
Greenewalt, John C., Chambersburg.
Grove, Aaron B., R. F. D. 10, Chambersburg.

Hartzell, Charles A., Fayetteville.
Hoover, Percy D., Waynesboro.
Kauffman, Leslie M., Kauffman.
Kempter, J. Elmond, Chambersburg.
Kennedy, James S., Fort Grant, Graham Co., Arizona.
Koons, John H., Waynesboro.
Lantz, William O., Lemasters.
Laughlin, Rebecca P., 1436 W. Street, Washington, D. C.
McLaughlin, Charles M., Greencastle.
Maclay, David, Chambersburg.
McLanahan, Johnston, Chambersburg.
Montgomery, James H., Buena Vista, Dade Co., Fla.
Montgomery, John, Buena Vista, Dade Co., Fla.
Montgomery, P. Brough, Chambersburg.
Myers, Benjamin F., Chambersburg.
Miley, Harry M., Chambersburg.
Noble, William P., Upton.
Palmer, Charles F., Chambersburg.
Palmer, Edgar W., Greencastle.
Ramsey, Robert W., Chambersburg.
Rothrock, Addison M., Mont Alto.
Schultz, William C., Waynesboro.
Seibert, John P., Chambersburg.
Sappington, William F., Webster Mills (Fulton Co.).
Skinner, John O., Washington, D. C., Columbia Hospital for Women.
Skinner, W. Frank, Chambersburg.
Snively, A. Barr, Waynesboro.
Snively, Isaac N., Waynesboro.
Snively, Joseph L., Shady Grove.
Sollenberger, Aaron B., Waynesboro.
Stoey, Oliver P., Roxbury.
Strickler, Abraham H., Waynesboro.
Swan, James H., St. Thomas.
Suesserott, Louis F., Chambersburg.
Unger, David F., Mercersburg.
Weagly, Theodore H., Marion.
White, Thomas D., Orrstown.
Zimmerman, Guy L., Lemasters.

FULTON COUNTY SOCIETY.

(Organized July 18, 1906.)

President. . William L. McKibben, McConnellsburg.
Secretary. . George M. Robinson, McConnellsburg.
Treasurer. . John W. Mosser, McConnellsburg.
Reporter. . . George M. Robinson, McConnellsburg.
Censors. . . . Harry C. McClain, Hustontown.
John W. Mosser, McConnellsburg.
S. S. Hoop, Andover.
Com. on Pub.
Policy and
Legislation . William L. McKibben, McConnellsburg.
Henry S. Wishart, McConnellsburg.
John W. Mosser, McConnellsburg.

Stated meetings at McConnellsburg the first Wednesday of each quarter.

MEMBERS (6).

Hoop, Samuel S., Andover.
McClain, Harry C., Hustontown.
McKibben, William L., McConnellsburg.
Mosser, John W., McConnellsburg.
Robinson, George M., McConnellsburg.
Wishart, Henry S., McConnellsburg.

GREENE COUNTY SOCIETY.

(Organized June 26, 1883.)

President. . Ira D. Knotts, Davistown.
V. Pres. . . . Thomas N. Milliken, Waynesburg.
Secretary. . Robert W. Norris, Waynesburg.
Treasurer. . John T. Iams, Waynesburg.
Reporter. . . James C. Knox, Waynesburg.
Censors. . . . Charles W. Spragg, Waynesburg.
S. L. McNeely, Kirby.
John T. Ullom, Waynesburg.
Com. on Pub.
Policy and
Legislation . Thomas N. Milliken, Waynesburg.
R. Edward Brock, Waynesburg.
Robert W. Norris, Waynesburg.

Stated meetings in Waynesburg the fourth Tuesday of October, April, June and August. Election of officers in October.

MEMBERS (25).

Brock, R. Edward, Waynesburg.
Day, Edward L., Clarksville.
Day, John R., Nineveh.
Eddy, Edward L., Greensboro.
Hatfield, George W., Mt. Morris.
Hill, Thomas Benton, Waynesburg.
Iams, John T., Waynesburg.
Johnson, E. H., Bristoria.
Kerr, John C., Jefferson.
Knotts, Ira D., Davistown.
Knox, James C., Waynesburg.
Laidley, Edmund W., Carmichaels.
McNeely, S. L., Kirby.
Milliken, Thomas N., Waynesburg.
Murray, John H., Windridge.
Norris, Robert W., Waynesburg.
Rice, Henry C., New Freeport.
Scott, George M., Waynesburg.
Scott, Harry L., Waynesburg.
Sharpnack, William Forest, Jefferson.
Spragg, Charles W., Waynesburg.
Throckmorton, William S., Nineveh.
Ullom, Frank Sellers, Waynesburg.
Ullom, John T., Waynesburg.
Williams, Samuel W., Nettle Hill.

HUNTINGDON COUNTY SOCIETY.

(Organized April 9, 1872.)

President. . Charles A. Roe McClain, Mt. Union.
V. Pres. . . . Alvin R. McCarthy, Mt. Union.
Secretary. . Howard C. Frontz, Huntingdon.
Treasurer. . George G. Harman, Huntingdon.
Reporter. . . Howard C. Froutz, Huntingdon.
Censors. . . . Rudolph Myers, Huntingdon.
Charles Campbell, Petersburg.
Charles B. Bush, Orbisonia.
Com. on Pub.
Policy and
Legislation . David P. Miller, Huntingdon.
George W. Simpson, Mill Creek.
Micaiah R. Evans, Huntingdon.

Stated meetings in Huntingdon the second Thursday of January, March, April, May, June, July, September, October and November. Election of officers in January.

MEMBERS (28).

Banks, Clark W., Derry Station (Westmoreland Co.).
Beck, John M., Alexandria.
Brumbaugh, Andrew B., Huntingdon.
Bush, Charles B., Orbisonia.
Campbell, Charles, Petersburg.
Campbell, William J., Mt. Union.
Evans, Micaiah R., Huntingdon.
Fleming, James M., Blairs Mills.
Fleming, John C., Shirleysburg.
Frontz, Howard C., Huntingdon.
Harman, George G., Huntingdon.
Johnson, William H., Dudley.
Johnston, James M., Huntingdon.
McCarthy, Alvin R., Mt. Union.
McClain, Charles A. Roe, Mt. Union.
Miller, David P., Huntingdon.
Miller, William M., McAlevys Fort.
Moore, Robert Hall, Huntingdon.
Myers, Rudolph, Huntingdon.
Schum, Frank L., Huntingdon.
Sears, W. Hardin, Huntingdon.
Simpson, George W., Mill Creek.
Steele, Bruce P., McVeytown (Mifflin Co.).
Smith, Lawrence D., Robertsdale.
Stever, John C., Mt. Union.
Taylor, Zane B., Orbisonia.
Wolfe, Lewis E., James Creek.
York, Harry J., Warriorsmark.

INDIANA COUNTY SOCIETY.

(Organized June 23, 1858.)

President. . Homer M. Wellman, Blairsville.
V. Pres. . . . James S. Hammers, Indiana.
Secretary. . George E. Simpson, Indiana.
Treasurer. . John M. St. Clair, Indiana.
Reporter. . . Howard B. Buterbaugh, Indiana.
Censors. . . . John T. Cass, West Lebanon, 1909.
Medius M. Davis, Indiana, 1908.
Homer M. Wellman, Blairsville, 1907.
Com. on Pub. Policy and Legislation. James S. Hammers, Indiana.
John M. St. Clair, Indiana.
Harold Ney Prothero, Indiana.

Stated meetings in Indiana second Tuesday of January and September and in Blairsville second Tuesday in May. Election of officers in January.

MEMBERS (37).

Ansley, William B., Saltsburg.
Bryson, James A., Creekside.
Buterbaugh, Howard B., Indiana.
Carson, John B., Blairsville.
Carson, Jason W., Blacklick.
Cass, John T., West Lebanon.
Clagett, Luther S., Blairsville.
Coe, Benjamin F., Dixonville.
Davis, Medius M., Indiana.
Dodson, William E., Indiana.
Earhart, Elias B., Saltsburg.
Elkin, John A., Willet.
Gourley, John C., Starford.
Hammers, James S., Indiana.
Kamerer, Samuel Alden, Smicksburg.
Lewis, E. B., Arcadia.
Lewis, Norman, Blairsville.
McEwen, Charles M., Plumville.
McHenry, Ralph F., Heilwood.
McMullen, James, Brush Valley.
Onstott, Elmer, Saltsburg.
Peterman, James H., Grant.
Pennock, William J., Blairsville.
Prideaux, William Albert, Grant.
Prothero, Harold Ney, Clymer.
Reed, William L., Homer City.
Rutledge, Albert T., Blairsville.
Scott, William M., Blacklick.
Shields, William L., Kent.
Simpson, George E., Indiana.
Simpson, William A., Indiana.
Spicher, Clarence C., Lovejoy.
St. Clair, John M., Indiana.
Stephens, Thomas D., Penn Run.
Sutton, M. Alva. Avonmore (Westmoreland Co.).
Walker, William B., Clarksburg.
Wellman, Homer M., Blairsville.

JEFFERSON COUNTY SOCIETY.

(Organized September 11, 1877. Incorporated April 16, 1887.)

President. . Spencer M. Free, DuBois.
V. Pres. . . . John W. Foust, Reynoldsville.
Secretary. . Charles C. Hammond, Wishaw.
Treasurer. . Charles C. Hammond, Wishaw.
Reporter. . . Harry B. King, Reynoldsville.
Censors. . . . Edward V. Kyle, Beech Tree.
John H. Murray, Reynoldsville.
J. Buchanan Neale, Reynoldsville.

Stated meetings at Reynoldsville, the fourth Friday of each month. Election of officers in July.

MEMBERS (58).

Aldrich, Charles S., Punxsutawney.
Balmer, Abraham F., Brookville.
Benson, Joseph P., Punxsutawney.
Beyer, William F., Punxsutawney.
Blaidsdell, Walter S., Punxsutawney.
Bleakney, Frank, Sprangle Mills.
Booher, Jay C., Falls Creek (Clearfield Co.).
Bottenhorn, Jacob P., Anita.
Bowser, Addison H., Reynoldsville.
Bowser, Ira D., Rathmel.
Brewer, Jeremiah J., Clarington (Forest Co.).
Brown, John K., Brookville.
Cochran, John C., Big Run.
Cranmer, Carl B., Iselin (Indiana Co.).
Davenport, Samuel M., DuBois (Clearfield Co.).
Foust, John W., Reynoldsville.
Free, Spencer M., DuBois (Clearfield Co.).
Grube, John E., Punxsutawney.
Grube, J. Miles, Punxsutawney.
Hamilton, Sylvester S., Punxsutawney.
Hammond, Charles C., Wishaw.
Haven, James A., Summerville.
Hennigh, George B., Sykesville.
Hilleary, Jesse G., DuBois (Clearfield Co.).

Horner, Parker P., Cool Spring.
Hughes, Charles W., Punxsutawney.
Humphreys, George H., Brockwayville.
King, James C., Reynoldsville.
King, Harry B., Reynoldsville.
Kyle, Edward V., Beech Tree.
Lawson, T. Chalmers, Brookville.
Logan, Samuel G., Tyler (Clearfield Co.).
Lorenzo, Frank A., Punxsutawney.
McCormick, Arthur F., Falls Creek (Clearfield Co.).
McGarrah, Harvey B., Reynoldsville.
McNeil, Arthur R., Beech Tree.
Maine, Charles L., Helvetia (Clearfield Co.).
Merrill, Benjamin E., Dents Run (Elk Co.).
Miller, James A., Hamilton.
Miller, Robert H., Hamilton.
Mills, Norman C., Eleanor.
Mohney, Irvin R., Brookville.
Morris, Joseph B., Punxsutawney.
Murray, John H., Reynoldsville.
Neale, J. Buchanan, Reynoldsville.
Newcome, John A., Seigle.
Newcome, William C., Big Run.
Pringle, Francis D., Punxsutawney.
Reynolds, Samuel, Reynoldsville.
Sayers, John C., Reynoldsville.
St. Clair, Harry P., 121 Cunningham St., Butler (Butler Co.).
Simpson, Alverdi J., Summerville.
Spinelli, P. Guiseppe, Punxsutawney.
Steiner, John G., Knoxdale.
Stevenson, Charles R., Delancy.
Thompson, Harry P., Brookville.
Williams, Thornton R., Punxsutawney.
Wilson, Charles A., DuBois (Clearfield Co.).

LACKAWANNA COUNTY SOCIETY.

(Organized November 20, 1878.)

(Scranton is the P. O. when street address only is given.)

President. . Lucius C. Kennedy, N. Washington Ave. and Marion St.
V. Pres. . . . Nelson E. Newbury, 1505 Capouse Ave.
 Edgar Sturge, 1202 Providence Road.
Secretary. . William E. Keller, 435 Wyoming Ave.
Treasurer. . Frederick J. Bishop, 810 Prescott Ave.
Reporter. . . William E. Keller, 435 Wyoming Ave.
Librarian. . Herbert D. Gardner, Scranton Private Hospital.
Censors. . . . James L. Rea, 1742 Sanderson Ave.
 William A. Paine, 1202 Washburn St.
 Francis P. Gunster, 415 Mulberry St.
Trustees. . . Gilbert D. Murray, 436 Wyoming Ave.
 Alexander J. Connell, Connell Building.
 Jonathan M. Wainwright, 444 Quincy Ave.
 Lowell M. Gates, 802 Mulberry St.
 Frederick L.Van Sickle, Olyphant.
Com. on Pub. Policy and Legislation. Franklin F. Arndt, 437 Wyoming Ave.
 Herbert D. Gardner, Scranton Private Hospital.
 Lowell M. Gates, 802 Mulberry St.
 Albert J. Winebrake, 608 N. Main Ave.
 William E. Keller, 435 Wyoming Ave.

Regular monthly meetings are held the second Tuesday of each month in the Council Chamber, City Hall, Scranton. Election of officers in January.

MEMBERS (140).

Albertson, Harry W., 2410 North Main Ave.
Alexander, Thomas L., 325 Spruce St.
Arndt, Franklin F., 437 Wyoming Ave.
Barton, Edith, 436 Adams Ave.
Bateson, John C., 316 North Washington Ave.
Beddoe, Benjamin G., 324 South Main Ave.
Bennet, William F., 306 N. Washington Ave.
Bernstein, Arthur H., Dime Bank Building.
Bessey, Herman, 1742 Church St.
Bilheimer, John J., Priceburg.
Birchard, Frederick S., Montrose (Susquehanna Co.).
Bishop, Frederick J., 810 Prescott Ave.
Bower, Ernest Z., 2059 North Main Ave.
Brady, William F., 416 Lackawanna Ave.
Brennan, John J., 159 South Main Ave.
Brown, George C., Dunmore.
Budd, Frank T., Peckville.
Burns, Reed, 316 Board of Trade Building.
Capwell, Daniel A., 431 Wyoming Ave.
Carroll, John J., 1309 Jackson St.
Catterall, Alfred H., Dickson City.
Connell, Alexander J., Connell Building.
Corser, John B., Scranton Private Hospital.
Davies, William Rowland, 221 S. Main Ave.
Davis, Philip J., 1907 North Main Ave.
Davis, Sumner D., Jermyn.
Davis, William J. L., 205 North Main Ave.
Dean, Alexander H., 306 N. Washington Ave.
Dean, G. Edgar, 1539 Monroe Ave.
De Antonio, Emilio, 348 Franklin Ave.
Dolan, William K., 633 N. Washington Ave.
Down, Howard C., Dalton.
Evans, Daniel W., 217 North Main Ave.
Everhart, Isaiah F., 135 Franklin Ave.
Everitt, Martha S., 350 Vine St.
Falkowsky, Charles, Jr., 327 Spruce St.
Feinberg, Solomon E., 437 Adams Ave.
Fisher, Charles H., Dime Bank Building.
Frey, Clarence Leslie, Scranton Savings Bank.
Frey, Lewis, 306 North Washington Ave.
Fulton, William G., 433 Wyoming Ave.
Gardner, Herbert D., Scranton Private Hospital.
Garvey, James B., Dunmore.
Gates, Lowell M., 802 Mulberry St.
Gibbons, Myles A., Dunmore.
Gibbs, L. Harrington, 217 South Main Ave.
Gillis, Alexander F., Carbondale.
Goodman, Isaac, 341 North Washington Ave.
Graves, Isaac S., Jermyn.
Griffith, Morgan E., Carbondale.
Grover, John Butler, Peckville.
Gunster, Francis P., 415 Mulberry St.

Halpert, Henry, 317 Linden St.
Harper, James G., Carbondale.
Heermans, Eugene A., 949 Scranton St.
Hollister, Frederick P., 2089 North Main Ave.
Jackson, Byron H., Mayfield.
Jacob, James F., Throop.
Jenkins, Daniel H., 1932 North Main Ave.
Jenkins, David J., 1526 Jackson St.
Kay, Thomas W., Scranton Private Hospital.
Kearney, Patrick H., 310 Wyoming Ave.
Keller, William Edwin, 435 Wyoming Ave.
Kelly, John A., Carbondale.
Kelly, John Joseph, Main & Laurel Sts., Archbald.
Kennedy, Lucius Carter, North Washington Ave. and Marion St.
Kennedy, William P., Priceburg.
Kiesel, Ernest L., 515 Lackawanna Ave.
Kneedler, J. Warren, Moscow.
Lillibridge, Alice, Connell Building.
Lloyd, Rossiter J., Olyphant.
Logan, Harry V., 306 North Washington Ave.
Lowry, Welles J., Carbondale.
McGrath, John T., 308 Wyoming Ave.
McKeage, Robert B., 309 North Main Ave.
Mackey, Nathan C., Waverly.
Malaun, Murvington E., Carbondale.
Manley, James A., 1418 Pittston Ave.
Manley, Peter C., 1320 Pittston Ave.
Mears, Daniel W., Connell Building.
Murrin, Connell Edward, Lake Como (Wayne Co.).
Merriman, George C., 732 Pittston Ave.
Monie, Thomas, Archbald.
Moylan, Francis P., 216 South Main Ave.
Murray, Gilbert D., 436 Wyoming Ave.
Myers, William W., Old Forge.
Newbury, Nelson E., 1515 Capouse Ave.
Newton, James R., 112 Wyoming Ave.
Niles, Andrew, Carbondale.
Niles, John S., Carbondale.
Niles, Ralph M., 414 Spruce St.
Noecker, Charles B., 306 Wyoming Ave.
O'Brien, J. Emmett, 201 Jefferson Ave.
O'Malley, John, 114 Adams Ave.
Paine, William A., 1202 Washburn St.
Peck, Weiland A.,2604 North Main Ave.
Porteus, John S., Taylor.
Price, John C., Connell Building.
Price, John J., Olyphant.
Raymond, Louis H., 116 South Main Ave.
Rea, James L., 1742 Sanderson Ave.
Reedy, Walter M., Connell Building.
Reifsnyder, Joseph C., Connell Building.
Rodham, Thomas B., 1824 North Main Ave.
Roos, E. Gottstark, 232 Adams Ave.
Sallade, Jacob L., 730 Cedar Ave.
Saltry, James F., 820 Capouse Ave.
Shields, Matthew J., 518 Pine St.
Shields, Samuel S., Carbondale.
Smith, Addison W., 511 N. Washington Ave.
Snyder, Marion D., Dunmore.
Spitzer, William, 1324 Mulberry St.
Stanton, John P., 130 West Market St.
Stegner, Adam, Rendham.
Stites, Thomas H. A., Connell Building.
Sturge, Edgar, 1202 Providence Road.
Sullivan, John J., 2006 Wayne Ave.
Sullivan, John J., Jr,, 213 Board of Trade Building.
Thomson, Charles E., Scranton Private Hospital.
Timlin, John J., Old Forge.
Van Doren, William, Archbald.
Van Sickle, Frederick L., Olyphant.
Voorhees, Samuel H., 1521 Pine St.
Wainwright, Jonathan M., 444 Quincy Ave.
Wagner, Frank J., Carbondale.
Walker, Claude W., Jermyn.
Walker, Patrick H., Luzerne St. and Railroad Ave.
Watson, Stephen S., Moosic.
Webb, Daniel A., 310 Wyoming Ave.
Wehlau, Ludwig, 322 Mulberry St.
Wentz, John L., Connell Building.
Wheelock, Frank R., 884 North Main Ave.
White, J. Norman, 349 South Main Ave.
Williams, Morgan J., 302 South Main Ave.
Wilson, Arthur J., Connell Building.
Winebrake, Albert J., 608 North Main Ave.
Winters, Frank W., Dunmore.
Woodcock, Lee B., 627 Linden St.
Wormser, Bernhard B., 234 Adams Ave.
Zeller, Charles A., Dalton.

LANCASTER CITY AND COUNTY SOCIETY.

(Organized January 26, 1844. Incorporated April 15, 1844.)

President	George R. Rohrer, Lancaster.
V. Pres.	Charles P. Stahr, Lancaster. Benjamin F. Good, Letort.
Secretary	Park P. Breneman, Lancaster.
Treasurer	Theodore B. Appel, Lancaster.
Reporter	Park P. Breneman, Lancaster.
Librarian	Park P Breneman, Lancaster.
Censors	Oliver Roland, Lancaster. James Mitchell, Lancaster. George W. Bernthelzel, Columbia.
Trustees	J. Henry Musser, Lampeter. John J. Newpher, Mount Joy. Abraham G. Bowman, Lancaster.
Com. on Pub. Policy and Legislation	Frank G. Hartman, Lancaster. Peter J. Roebuck, Lititz. George E. Day, Strasburg.

Stated meetings in Lancaster the first Wednesday of each month, at 2 P. M. Election of officers in January.

MEMBERS (136).

Achey, Frederick A., E. Petersburg.
Alexander, Guy Levis, Oakmont (Allegheny Co.).
Alleman, Frank, Philadelphia (Philadelphia Co.).
Appel, Theodore B., Lancaster.
Atlee, John L., Lancaster.
Baer, Walter K., Lancaster.
Barsumian, Hagop G., Lancaster.
Becker, Phares N., Mastersonville.
Bernthelzel, George W., Columbia.
Blemesderfer, Frank I., Lancaster.
Binckley, William G., Washingtonboro
Bitzer, Newton E., Lancaster.
Blough, Henry K., Elizabethtown.
Bolenius, Robert M., Lancaster.
Bowers, Herbert R., Lancaster.
Bowman, Abraham G., Lancaster.
Breneman, Park P., Lancaster.

Brenholtz, Walter S., Lancaster.
Bryson, Howard R., Lancaster.
Bryson, Lewis M., Paradise.
Cassel, George Lincoln, Lancaster.
Craig, Alexander R., 114 S. 18th St., Philadelphia (Philadelphia Co.).
Crawford, Samuel M., Columbia.
Davis, Miles L., Lancaster.
Davis, Samuel T., Lancaster.
Day, George E., Strasburg.
Denlinger, Maurice M., Rohrerstown.
Detwiler, Thomas C., Lancaster.
Dissler, Harry S., Schoeneck.
Dunlap, J. Francis, Manheim.
Frew, George, Paradise.
Garretson, William, Millersville.
Garvey, Thomas Q., Lancaster.
Gerhard, Milton U., Lancaster.
Gillespie, George W., Pleasant Grove.
Good, Benjamin, F., Letort.
Gray, Samuel G., Landisville.
Harter, G. Alvin, Maytown.
Hartman, Frank G., Lancaster.
Heller, Samuel H., Lancaster.
Helm, Amos H., New Providence.
Helm, Charles E., Bart.
Henry, J. Albert, Lancaster.
Herr, Ambrose J., Lancaster.
Herr, Benjamin F., Millersville.
Herr, William H., Lancaster.
Hershey, Jacob D., Manheim.
Hershey, George Blair, Gap
Hertz, John K., Lexington.
Hertz, John L., Lititz.
Hess, William G., Greene.
Hinkle, Franklin, Columbia.
Hope, John Furgeson, Lancaster.
Houston, Joseph W., Lancaster.
Hurst, Michael W., Talmadge.
Hyus, Edmund B., Lancaster.
Ingram, Theodore E., Marietta.
Irwin, Thaddeus S., Christiana.
Jenkins, Joseph C., Lititz.
Kalbach, Adam M., Lancaster.
Kauffman, Walter L., Lancaster.
Kendig, Benjamin E., Salunga.
Kendig, Jerome S., Salunga.
Kennedy, Joseph P., Columbia.
Keylor, Walter N., Leacock.
Kinard, George C., Lincoln.
Kinard, George W., Leacock.
Kinard, John W., Lancaster.
King, George P., Lancaster.
Kohler, John B., New Holland.
Koser, Samuel B., Mountville.
Kreiter, John S., Akron.
Leaman, Adam E., West Willow.
Leaman, Walter J., Leaman Place.
Lehman, Jacob R., Mountville.
Leslie, LeRoy K., Bareville.
Lichty, Samuel M., Intercourse.
Lightner, Isaac Newton, Ephrata.
Livingston, Thomas M., Columbia.
Long, Howard S., Brickerville.
McCaa, D. Galen, Lancaster.
McCanna, John M., Mount Joy.
McCaskey, Donald, Witmer.
McCormick, Daniel R., Lancaster.
Markel, Chester F., Columbia.
Martin, John R. B., Gap.
Miller, Samuel W., Lancaster.
Mitchell, James, Lancaster.
Mowery, Harry A., Marietta.
Mowery, Jacob L., Lancaster.
Muhlenberg, Henry E., Lancaster.
Musser, J. Henry, Lampeter.
Myers, Harry F., Lancaster.
Mylin, Walter F., Intercourse.
Netcher, Charles E., Lancaster.
Newpher, John J., Mount Joy.
Pickel, I. Harry, Millersville.
Raub, Michael W., Lancaster.
Reamsnyder, J. Byron, Hinkletown.
Reed, Joseph A. E., Lancaster.
Reeder, Milton T., Millersville.
Reeser, Richard, Columbia.
Ressler, Jacob L., Bird-in-Hand.
Ringwalt, Martin, Rohrerstown.
Roebuck, J. Paul, Lititz.
Roebuck, Peter J., Lititz.
Rohrer, George R., Lancaster.
Rohrer, Thaddeus M., Quarryville.
Roland, Oliver, Lancaster.
Roop, Claude D., New Providence.
Roop, Harry B., Columbia.
Schaeffer, Peter F., Christiana.
Schowalter, Henry C. W., New Holland.
Shartle, J. Miller, Lancaster.
Shenk, John H., Lititz.
Shenk, Daniel H., Lancaster.
Snavely, Harry B., Lancaster.
Stahr, Charles P., Lancaster.
Steward, William J., Lancaster Co. Hospital, Lancaster.
Styer, Daniel W., Churchtown.
Sultzbach, Henry Miller, Lancaster.
Tinney, William Scott, Strasburg.
Trabert, J. William, Lebanon (Lebanon Co.).
Trexler, Jacob F., Lancaster.
Walter, Adam V., West Earl.
Walter, Henry, Rothsville.
Weidler, Walter B., Lancaster.
Wentz, Thomas H., Kirkwood.
Winters, John L., Blue Ball.
Witmer, Elias H., Neffsville.
Witmer, Isaac M., Lancaster.
Witmer, Frank B., Bismarck (Lebanon Co.).
Worth, William T., Bainbridge.
Yost, John W., Bethesda.
Zeigler, James P., Mount Joy.
Zell, John W., Fairmount.

LAWRENCE COUNTY SOCIETY.

(Reorganized October 7, 1897.)

President. . Jesse R. Cooper, New Castle.
V. Pres. . . . Charles A. Reed, New Castle.
Elizabeth M. McLaughry, New Castle.
Secretary. . Brant E. Sankey, New Castle.
Treasurer. . John Foster, New Castle.
Reporter. . . Brant E. Sankey, New Castle.
Censors. . . . John Foster, New Castle.
W. L. Campbell, New Castle.
Robert G. Miles, New Castle.

Stated meetings monthly. Election of officers in October.

MEMBERS (39).

Boak, Robert G., New Castle.
Campbell, W. L. New Castle.

Cooper, Edwin S., New Castle.
Cooper, Jesse R., New Castle.
Cox, Joseph R., New Castle.
Dean, Hallis G., New Castle.
Donnan, Edmund A., New Castle.
Evans, Daniel E., New Castle.
Foster, John, New Castle.
Gageby, Lenore H., New Castle.
Harris, David R., New Castle.
Jack, Anna M., New Castle.
Kissinger, Walter C., New Castle.
Knoll, Louis P., New Castle.
Lindly, Don C., New Castle.
Linville, Montgomery, New Castle.
McComb, Edwin C., New Castle.
McDowell, C. Fenwick, New Castle.
McKee, Harry W., New Castle.
McLaughry, Elizabeth M., New Castle.
Miles, Robert G., New Castle.
Perry, Samuel W., New Castle.
Pollock, James K., New Castle.
Popp, James M., New Castle.
Porter, Cassius M., Hillsville.
Redmond, Robert E., New Castle.
Reed, Charles A., New Castle.
Sankey, Brant E., New Castle.
Tobey, Edgar A., New Bedford.
Tucker, John D., New Castle.
Urey, Frank F., Wampum.
Wallace, Robert A., New Castle.
Williams, Thomas V., New Castle.
Wilson, Harry R., New Castle.
Wilson, Loyal W., New Castle.
Wilson, William G., New Castle.
Womer, W. A., New Castle.
Zerner, H. Elmore, New Castle.
Zimmerman, Henry E., Mt. Jackson.

LEBANON COUNTY SOCIETY.

(Organized May 10, 1851.)

President. .William M. Guilford, Lebanon.
V. Pres. . . .Alfred S. Weiss, 814 Chestnut St., Lebanon.
Seth Light, 539 Cumberland St., Lebanon.
Secretary. .Charles M. Strickler, Lebanon.
Treasurer. .Warren F. Klein, Lebanon.
Reporter. . .Ezra Grumbine, Mt. Zion.
Censors. . . .Warren F. Klein, Lebanon.
Henry H. Roedel, Lebanon.
William M. Guilford, Lebanon.
Com. on Pub. Policy and Legislation. Samuel P. Heilman, Heilman Dale.
Harvey E. Maulfair, Lebanon.
Charles M. Strickler, Lebanon.

Stated meetings the second Tuesday of each month at 2 P. M., at the Eagle Hotel, Lebanon. Election of officers in January.

MEMBERS (20).

Bashore, Simeon D., Palmyra.
Beattie, John, 11 S. Fourth St., Lebanon.
Beckley, Joseph R., Lebanon.
Gingrich, Edward H., 511 Cumberland St., Lebanon.
Grumbine, Ezra, Mt. Zion.
Guilford, William M., Lebanon.
Heilman, Samuel P., Heilman Dale.
Klein, Warren F., Lebanon.
Kurr, Thomas A., Fredericksburg.
Light, John J., Lebanon.
Light, Seth, 539 Cumberland St., Lebanon.
Maulfair, Harvey E., Lebanon.
Miller, Charles L., Lebanon.
Rank, David M., Annville.
Risser, Ulysses G., Campbelltown.
Roedel, Henry H., Lebanon.
Roedel, William R., Lebanon.
Strickler, Charles M., Lebanon.
Walter, John, Lebanon.
Weiss, Alfred S., 814 Chestnut St., Lebanon.

LEHIGH COUNTY SOCIETY.

(Organized 1850.)

President. .Nathaniel C. E. Guth, Allentown.
V. Pres. . . .Robert C. King, Hellertown (Northampton Co.).
Robert W. Young, Slatington.
Secretary. .J. Treichler Butz, Allentown.
Treasurer. .Albert J. Erdman, Allentown.
Reporter. . .H. Herbert Herbst, Allentown.
Librarian. .Augustus W. Hendricks, Allentown.
Censors. . . .Martin J. Backenstoe, Emaus.
Calvin J. Otto, Allentown.
William A. Riegel, Catasauqua.
Com. on Pub. Policy and Legislation. Morris F. Cawley, Allentown.
Palmer J. Kress, Allentown.
Willard D. Kline, Allentown.

Stated meetings at the Administration Building, Allentown, on the second Tuesday of each month. Election of officers in January.

MEMBERS (72).

Albright, Roderick E., Allentown.
Arner, Quintin D., Cementon.
Backenstoe, Martin J., Emaus.
Backenstoe, William A., Emaus.
Bean, Harvey F., Mountainville.
Bingaman, Edwin M., Old Zionsville.
Bleiler, Peter O., Allentown.
Boyer, George H., Allentown.
Bruch, Elmer C., West Bethlehem.
Burke, Patrick F., Allentown.
Butz, J. Treichler, Allentown.
Cawley, Morris F., Allentown.
Dickenshied, Eugene H., Allentown.
Erdman, Albert J., Allentown.
Erdman, William B., Macungie.
Eshbach, William W., Allentown.
Fetherolf, Frederick A., Allentown.
Fogel, Solon C. B., Allentown.
Greiss, William H., Allentown.
Guth, Nathaniel C. E., Allentown.
Hartzell, William H., Allentown.
Hartzell, Rein K., Allentown.
Hausman, William A., Jr., Allentown.
Hendricks, Augustus W., Allentown.
Henry, Charles O., Allentown.
Herbst, H. Herbert, Allentown.
Hertz, William J., Allentown.
Horn, Henry Y., Coplay.
Hornbeck, James L., Catasauqua.
Huebner, Irwin F., Allentown.
Keim, Charles J., Catasauqua.

Keim, Harry J. S., Catasauqua.
King, Robert C., Hellertown (Northampton Co.).
Kistler, Jesse G., Germanville.
Klotz, Robert B., Rittersville.
Kline, Willard D., Allentown.
Kress, Palmer J., Allentown.
Kriebel, Asher, Lynnville.
Lear, John, Allentown.
Leh, Henry D., Egypt.
Litzenberger, Henry A., Orefield.
Lowright, James Harvey, Center Valley.
Lowright, Wallace J., Center Valley.
McAvoy, Jeremiah F., Catasauqua.
Mack, John S., Slatington.
Martin, Charles S., Allentown.
Mickley, Howard P., Neffs.
Miller, Aaron S., Saegersville.
Miller, Albert N., East Texas.
Miller, Mahlon G., Siegfried (Northampton Co.).
Nagle, Thomas S., Allentown.
Otto, Calvin J., Allentown.
Peters, R. Cornelius, Allentown.
Pfleuger, Charles J., Fogelsville.
Reichard, Philip L., Allentown.
Richards, Josiah W., Slatington.
Riegel, Henry H., Catasauqua.
Riegel, William A., Catasauqua.
Ritter, Hope T. M., Allentown.
Saeger, Luther J., Allentown.
Schaeffer, Charles D., Allentown.
Scheirer, Franklin B., Allentown.
Scherer, Thomas A., Catasauqua.
Seiberling, Fred C., Allentown.
Seiberling, George F., Allentown.
Smith, James S., Allentown.
Trexler, William B., Fullerton.
Wagner, J. Frederick, Allentown.
Weaber, Thomas H., Allentown.
Weida, Isadore J., Emaus.
Yost, Alfred J., Allentown.
Young, Robert W., Slatington.

LUZERNE COUNTY SOCIETY.

(Organized March 4, 1861.)

(Wilkes-Barre is the P. O. when street address only is given.)

President. . J. Irving Roe, 34 N. Washington St.
V. Pres. . . . Herbert B. Gibby, Pittston.
John E. Scheifly, Edwardsdale.
Secretary. . Delbert Barney, 55 North Washington St.
Treasurer. . Delbert Barney, 55 North Washington St.
Reporter. . . James W. Geist, 162 S. Main St.
Librarian. . Lewis H. Taylor, 83 S. Franklin St.
Censors. . . . William C. Gayley, 1 year, Hazleton.
Harry LeRoy Whitney, 2 years, Plymouth.
William G. Weaver, 3 years, 51 South Washington St.
Editor . . . . Maris Gibson, 285 South Washington St.
Historian . . Lewis H. Taylor, 83 S. Franklin St.
Com. on Pub. Policy and Legislation. Alexander G. Fell, 317 S. River St.
Frank P. Lenahan, 55 South Washington St.
Clarence W. Prevost, Pittston.

Stated meetings, Room 4, Anthracite Building, Wilkes-Barre, first and third Wednesday of each month, at 8:30 P. M. Election of officers first meeting in January.

MEMBERS (125).

Ahlborn, Maurice B., 99 North Franklin St.
Andreas, George R., 204 East South St.
Ashley, Charles L., Plymouth.
Barney Delbert, 55 North Washington St.
Barton, A. Arthur, Plains.
Beckwith, J. Fabius, Plymouth.
Bennett, Clarence E., Nanticoke.
Berge, William H., Avoca.
Brooks, Allan C., 84 North Franklin St.
Brooks, James, Plains.
Buckman, Ernest U., 96 South Franklin St.
Burlington, John A., Duryea.
Burt, Judson M., Rhone.
Byron, Lawrence D., Pittston.
Carr, George W., 49 South Franklin St.
Clark, George A., 326 South Main St.
Corss, Frederic, 214 Maple St., Kingston.
Davison, William F., Dorranceton.
Davis, Walter, 24 South Washington St.
Davis, William J., 229 Barney St.
Danzer, William F., Hazleton.
Deardorff, William H., Freeland.
Deibel, Henry W., 119 Academy St.
Dodson, Boyd, 186 Dana St.
Doolittle, Edgar B., Hazleton.
Dougherty, Anthony F., Ashley.
Dougherty, Edward S., Ashley.
Dyson, John R., Hazleton.
Edwards, Lewis, Edwardsdale.
Ernst, Charles H., 55 Hanover St.
Farrar, John K., Audenried (Carbon Co.).
Faulds, William H., Kingston.
Fell, Alexander G., 317 South River St.
Fischer, Herman A., 311South Washington St.
Foss, Walter B., Ashley.
Gayley, William C., Hazleton.
Geist, James W., 162 South Main St.
Gibby, Herbert B., Pittston.
Gibson, Maris, 285 South Washington St.
Gilligan, James P., 350 Scott St.
Grosser, Claude R., 239 South Washington St.
Guthrie, George Donald, 109 S. Franklin St.
Guthrie, George W., 109 South Franklin St.
Hartman, William L., Pittston.
Harvey, Olin F., 165 South Franklin St.
Hauslohner, Austin Ladimar, 32 N. Washington St.
Howell, John T., 84 North Main St.
Hubler, Philip F., Pittston.
James, Thomas A., Ashley.
James, Uriah A., 837 South Main St.
Jennings, Joseph A., Pittston.
Johnson, Frederick C., 22 West Union St.
Kirschner, John W., Forty Fort.
Kistler, Oliver F., 43 North Franklin St.
Knapp, Charles P., Wyoming.
Krajewski, Frank J., Nanticoke.

Kunkel, Henry, 790 Market St., Kingston.
Lake, David H., Kingston.
Lathrop, Walter, Hazleton.
Lazarus, William W., Centermoreland (Wyoming Co.).
Lenahan, Frank P., 55 South Washington St.
Lockhead, Harris B., Pittston.
Long, Charles, 33 South Washington St.
Long, Charles A., Muhlenburg.
Longshore, William R., Hazleton.
McFadden, Charles J., Pittston.
McGinty, Edward F., Pittston.
McKee, Frank L., Plymouth.
MacKeller James, Hazleton.
Mahon, John B., Pittston.
Marvin, Merton E., Luzerne.
Matlack, Granville T., 33 W. Northampton St.
Meixell, Edwin W., 118 South Main St.
Mengel, Samuel P., Parsons.
Meyers, E. Llewellyn, 158 South Main St.
Miner, Charles H., 115 South Franklin St.
Mendelsohn, Isaac Wayne, 50 S. Washington St.
Moffatt, Ralph E., Dorranceton.
Myers, Noah Ray, Wanamie.
Neale, Henry M., Upper Lehigh.
Nealon, James M., Plymouth.
Newth, John H., Pittston.
Perry, George B., Pittston.
Person, John A., 240 Scott St.
Prevost, Clarence W., Pittston.
Reichard, S. Warren, 282 S. Washington St.
Richards, Emrys, 130 North Main St.
Richards, William L., 24 North Meade St.
Robinhold, Daniel G., Forty Fort.
Roderick, Edward R., 92 South Franklin St.
Roe, I. Irving, 34 North Washington St.
Rogers, L. Leonidas, 268 Wyoming Ave., Kingston.
Ross, Nathaniel, 141 Hanover St.
Schappert, N. Louis, 31 South Washington St.
Scheifly, John E., Edwardsdale.
Shaw, John F., 385 North Main St.
Shoemaker, Albert Moore, White Haven.
Shoemaker, Levi I., 59 South Franklin St.
Sheridan, Lawrence A., 325 North Main St.
Sickler, Parke C., 90 Academy St.
Smith, A. Burton, Wyoming.
Smith, W. Clive, 49 South Franklin St.
Stackhouse, Charles P., 210 Parrish St.
Stewart, Walter S., 98 South Franklin St.
Stiff, William Clifton, Plymouth.
Stoeckel, Louise M., 30 North Franklin St.
Stricker, William B., Nanticoke.
Sweeney, Edward A., 34 South Washington St.
Taylor, Lewis H., 83 South Franklin St.
Taylor, Richard P., 25 South Washington St.
Templeton, Harry G., Plymouth.
Tobias, John B., 305 East Northampton St.
Trapold, August, 235 South Washington St.
Tressler, Charles W., Shickshinny.
Underwood, Sanford L., Pittston.
Wadhams, Raymond L., 72 N. Franklin St.
Wagner, Earl E., 501 Carey Ave.
Wagner, Edward C. O., 125 S. Washington St.
Weaver, William G., 51 South Washington St.
Wetherby, Benedict J., 64 North Franklin St.
Wetherby, Della P., 64 North Franklin St.
Whitney, Harry LeRoy, Plymouth.
Wilcox, Homer B., 168 Maple St., Kingston.
Wolfe, Samuel M., 127 Academy St.
Wycoff, Sarah Delia, 68 West South St.

LYCOMING COUNTY SOCIETY.

(Organized 1849.)

(Williamsport is the P. O. when street address only is given.)

President..Horace G. McCormick, 430 West Fourth St.
V. Pres....Randall B. Hayes, Vilas.
William W. Fletcher, 3 E. Third St.
Secretary..Clarence E. Shaw, 342 W. Fourth St.
Treasurer..Wesley F. Kunkle, 519 Seventh Ave.
Reporter...William E. Delaney, Slate Run.
Censors....Charles W. Youngman, 601 Pine St.
John A. Klump, 331 Elmira St.
Horace G. McCormick, 430 West Fourth St.
G. Franklin Bell, Newberry.
George D. Nutt, 430 Pine St.
Trustees...Horace G. McCormick, 430 West Fourth St.
Clarence E. Shaw, 342 W. Fourth St.
Wesley F. Kunkle, 519 Seventh Ave.
Alem P. Hull, Montgomery.
Charles W. Youngman, 601 Pine St.
Com. on Pub. Policy and Legislation. Horace G. McCormick, 430 West Fourth St.
Charles W. Youngman, 601 Pine St.
Alem P. Hull, Montgomery.
Charles Schneider, 1501 Southern Ave.
Clarence E. Shaw, 342 W. Fourth St.

Stated meetings at City Hospital, Williamsport, second Friday of each month at 2 P. M. Annual meeting in January.

MEMBERS (89).

Adams, Charles M., 1025 West Fourth St.
Albright, Chester E., Muncy.
Albright, Joseph W., Muncy.
Alleman, Emanuel A., W. Milton (Union Co.).
Bastian, Charles B., 48 West Fourth St.
Beech, John D., Montoursville.
Bell, G. Franklin, Newberry.
Campbell, Eugene B., 42 West Fourth St.
Campbell, John A., 109 Funston Ave., Newberry.
Castlebury, Alzine M., Cor. Campbell St. and Glenwood Ave.
Castlebury, Frank Fullmer, Roaring Branch.
Chaapel, Victor P., Newberry.
Christian, J. Loomis, Lopez (Sullivan Co.).
Dandois, G. Frank, Liberty (Tioga Co.).
Davis, Sidney, Milton (Northumberland Co.).
Delaney, William E., Slate Run.
Derr, Joseph L., Lairdsville.
Detwiler, Benjamin H., 327 East Third St.
Donaldson, Harry J., 230 Market St.

Dougal, James S., Milton (Northumberland Co.).
Drick, George R., 230 Market St.
Emerick, Henry M., Milton (Northumberland Co.).
Essick, Howard M., Picture Rocks.
Everett, Edward, Millville (Columbia Co.).
Fleming, J. Frank, Trout Run.
Fletcher, William W., 3 East Third St.
Gilmore, Thomas J., 41 West Fourth St.
Glosser, William E., 430 Pine St.
Gordner, J. Frank, Montgomery.
Hardt, Albert F., 35 West Fourth St.
Harley, John P., 1203 West Fourth St.
Haskin, Herbert P., 426 Pine St.
Hayes, Randall B., Vilas.
Heller, Charles E., 214 East Third St.
Hull, Alem P., Montgomery.
Hull, Elmer S., Montgomery.
Hull, Waldo W., 626 West Third St.
King, William L., Muncy.
Kinne, Howard S., Newberry.
Klump, George B., 331 Elmira St.
Klump, John A., 331 Elmira St.
Konkle, W. Bastian, Montoursville.
Kunkle, Wesley F., 519 Seventh Ave.
Lamade, Albert C., 42 East Fourth St.
Lehman, Charles H., Newberry.
Logue, William P., 109 West Third St.
Lyon, Edward, 40 West Fourth St.
McCormick, Horace G., 430 West Fourth St.
Mansuy, J. Louis, Ralston.
Marsh, William G., Watsontown (Northumberland Co.).
Metzgar, George W., Hughesville.
Milnor, Mahlon T., Warrensville.
Milnor, Robert H., Warrensville.
Morgan, Rose, 310 East Third St.
Morrison, Edward L., Jersey Shore.
Nevins, John, Jersey Shore.
Nevling, Ferdinand S., Karthaus (Clearfield Co.).
Nutt, George D., 430 Pine St.
Persing, Amos V., Allenwood (Union Co.).
Poust, G. Alvin, Hughesville.
Randall, William H., Laporte (Sullivan Co.).
Raper, Thomas W., Lairdsville.
Richter, Augustus, 436 Market St.
Ritter, Ella N., 1217 West Fourth St.
Ritter, H. Murray, 37 West Fourth St.
Rote, William H.,18 East Third St.
Sanford, Frederick G., Jersey Shore.
Schaefer, J. Elmer, Lycoming.
Schneider, Charles, 1501 Southern Ave.
Shaw, Clarence E., 342 West Fourth St.
Senn, Carl H., 430 Market St.
Shindel, William, Sunbury (Northumberland Co.).
Shull, John D., Union Depot, Baltimore, Md.
Smith, Morton H., Hughesville.
Steans, J. Charlton, Mifflinburg (Union Co.).
Steans, Ralph, Zellwood, Florida.
Stickel, Jacob, 714 West Fourth St.
Thornton, Thomas C., Lewisburg (Union Co.).
Trainer, Robert F., 310 Elmira St.
Truckenmiller, William U., Allenwood (Union Co.).
Tule, R. Bruce, Montandon (Northumberland Co.).
Vanhorn, John W., Montoursville.
Voorhees, Charles D., Sonestown (Sullivan Co.).
Wagenseller, Benjamin F., Selins Grove (Snyder Co.).
Weddigen, Ferdinand E., 430 Pine St.
Welker, Abraham T., Collomsville.
Wilkinson, Truman G., 35 West Third St.
Wood, L. Kenneth, Muncy.
Youngman, Charles W., 601 Pine St.

McKEAN COUNTY SOCIETY.

(Organized June 18, 1880.)

President. .Martin J. Sweeney, Kane.
V. Pres. . . .John C. Brown, Smethport.
Secretary. .James Johnston, Bradford.
Treasurer. .James Johnston, Bradford.
Reporter. . .James Johnston, Bradford.
Censors. . . .Henry L. McCoy, Smethport.
James C. Walker, Bradford.
Charles F. Elliott, Mt. Jewett.
Com. on Pub. Policy and Legislation. George E. Benninghoff, Bradford.
William P. Burdick, Mt. Jewett.

Stated meetings at place selected the first Tuesday of alternate months. Election of officers in October.

MEMBERS (41).

Armstrong, William J., Kane.
Ash, Arthur F., Duke Center.
Ash, Dunham E., East Bradford.
Baker, William A., Kane.
Benninghoff, George E., Bradford.
Briggs, Erwin S., Hazelhurst.
Brown, John C., Smethport.
Burdick, William P., Mt. Jewett.
Chadwick, Burg, Smethport.
Canfield, Harris A., Bradford.
Cannan, John J., Bradford.
Clark, John, Smethport.
Dana, Lawrence W., Broadford (Fayette Co.).
Elliott, Charles F., Mt. Jewett.
Fraker, Samuel R., Mt. Alton.
Fredericks, William J., Bradford.
Haines, Samuel H., East Bradford.
Hall, Bret H., Bradford.
Hayes, Mary J., Kane.
Hickman, Ernest H., Kane.
Hogan, William C., Bradford.
Howe, L. O., Bradford.
Johnston, James, Bradford.
Kane, Elizabeth D., Kane.
Kane, Evan O., Kane.
Kane, Thomas L., Kane.
McCleery, Edward H., Kane.
McCoy, Henry L., Smethport.
McLean, Earle McCormack, Eldred.
Nichols, Henry James, Bradford.
Ostrander, William A., Smethport.
Pierce, Alfred P., Bradford.
Robison, Joseph H., Bradford.
Russell, Walter J., Bradford.
Spangler, Charles, Kane.
Straight, A. Miner, Bradford.
Straight, Persis Rosamond, Bradford.
Sweeney, Martin J., Kane.
Tucker, Adelaide Griffin, Bradford.
Walker, James C., Bradford.
Winger, Frederick W., Bradford.

MERCER COUNTY SOCIETY.

(Organized 1848.)

President. .John A. Blair, Greenville.
V. Pres. . . .George W. Kennedy, Sharon.
Ralph M. Tidd, Clark.
Secretary. .Paul T. Hope, Mercer.
Treasurer. .Clarence W. McElhaney, Greenville.
Reporter. . .Charles I. Walker, Sharon.
Censors. . . .John W. Elliott, 1 year, Sharon.
Beriah E. Mossman, 2 years, Greenville.
Joseph H. Reed, 3 years, Sharon.
Com. on Pub. Policy and Legislation. John M. Martin, Grove City.
Thomas Elliott, Sharon.
Robert M. Hope, Mercer.

Stated meetings at Greenville, second Friday in January and April; at Mercer, second Friday in July and October. Election of officers in January.

MEMBERS (46).

Armstrong, Henry A., Sharon.
Bachop, John C., Sheakleyville.
Barnes, Mathew A., Pardoe.
Blair, John A., Greenville.
Cheeseman, John C., Grove City.
Cooley, Judson, Sandy Lake.
Elliott, John W., Sharon.
Elliott, Thomas, Sharon.
Fisher, Philip P., Sharon.
Hanna, David B., Stoneboro.
Heilman, Salem, Sharon.
Hiller, Joseph W., West Middlesex.
Hoon, Anthony I., Mercer.
Hope, Paul T., Mercer.
Hope, Robert M., Mercer.
Hunter, John A., West Middlesex.
Jackson, Thomas M., Hadley.
Kennedy, George W., Sharon.
Livingston, James B., West Middlesex.
McCartey, John R., Fredonia.
McConnell, Edwin M., Grove City.
McElhaney, Clarence W., Greenville.
Magoffin, Montrose M., Mercer.
Marshall, Clifford, Sharon.
Martin, John M., Grove City.
Mead, Harry B., Stoneboro.
Mitchell, Thomas H., Jamestown.
Montgomery, Beriah H., Grove City.
Mossman, Beriah E., Greenville.
Nelson, John M., Mercer, R. F. D.
Nelson, Ernest F., Grove City.
O'Brien, Augustus M., Sharon.
Phillips, William H., Greenville.
Reed, Joseph H., Sharon.
Seidel, Charles T. W., Sharpsville, R. F. D.
Stoyer, George W., Sharpsville.
Tidd, Ralph M., Clark.
Tinker, Guert M., Sharon.
Twitmyer, John H., Sharpsville.
Walker, Charles I., Sharon.
Washabaugh, David J., Grove City.
Weidman, J. Clayton, Mercer.
Wyant, William W., South Sharon.
Wyant, Florence B., Sharon.
Yeager, M. George, Mercer.
Zeigler, Samuel M., Greenville.

MIFFLIN COUNTY SOCIETY.

(Organized March 4, 1874.)

President. .Henry W. Sweigart, Lewistown.
V. Pres. . . .Robert T. Barnett, Lewistown.
Samuel H. Rothrock, Reedsville.
Secretary. .James A. C. Clarkson, Lewistown.
Treasurer. .Alexander S. Harshberger, Lewistown.
Reporter. . .Walter H. Parcels, Lewistown.
Censors. . . .Walter S. Wilson, Lewistown.
Thomas H. Smith, Burnham.
Charles J. Stambaugh, Reedsville.
Com. on Pub. Policy and Legislation. Alexander S. Harshberger, Lewistown.
John P. Getter, Belleville.
Henry E. Miller, Milroy.
Charles M. Johnson, McVeytown.
Samuel H. Rothrock, Reedsville.

Stated meetings in Lewistown or elsewhere as may be selected, on the first Thursday of each month. Election of officers in January.

MEMBERS (25).

Baker, William M., Lewistown.
Barnett, Robert T., Lewistown.
Boyer, Samuel J., Siglerville.
Brisbin, Charles H., Lewistown.
Clarkson, James A. C., Lewistown.
Getter, John P., Belleville.
Harshberger, Alexander S., Lewistown.
Hunter, John Russell, Lewistown.
Johnson, Charles M., McVeytown.
Johnson, Richard M., McVeytown.
Kohler, Benjamin R., Reedsville.
Kohler, William H., Milroy.
McKim, Vincent I., Burnham.
Miller, Henry E., Milroy.
Moorehouse, William G., Elmira, N. Y., P. R. R.
Nipple, D. Clark, Newton Hamilton.
Parcels, Walter H., Lewistown.
Rice, Charles W., Lewistown.
Rothrock, Samuel H., Reedsville.
Rupp, Fred A., Lewistown.
Smith, Thomas H., Burnham.
Stambaugh, Charles J., Reedsville.
Sweigart, Henry W., Lewistown.
Swigart, Samuel W., Lewistown.
Wilson, Walter S., Lewistown.

MONROE COUNTY SOCIETY.

(Organized November 24, 1902.)

President. .J. Anson Singer, East Stroudsburg.
V. Pres. . . .Charles Shaw Logan, Stroudsburg.
Secretary. .William E. Gregory, Stroudsburg.
Treasurer. .John A. Hagerman, Scioto.
Reporter. . .Nathaniel C. Miller, Stroudsburg.

Regular meetings held in Miller Hall, Stroudsburg, the first Wednesday of each month. Annual meeting in January.

MEMBERS (27).

Angle, W. L., East Stroudsburg.
Brown, Fannie, North Water Gap.
Carey, Thomas H., Cresco.
Gregory, William E., Stroudsburg.
Gulick, Esther W., Stroudsburg.
Gruver, Charles D., Stroudsburg.
Hagenbach, Phoebe H. F., Stroudsburg.
Hagerman, John A., Scioto.
Henry, John C., East Stroudsburg.
Howerter, William F., Saylorsburg.
L'Amareaux, Samuel W., Stroudsburg.
Levering, Eugene H., Stroudsburg.
Levering, Rogers L., Scioto.
Logan, Charles Shaw, Stroudsburg.
Miller, Joseph F., Bushkill (Pike Co.).
Miller, Nathaniel C., Stroudsburg.
Parsons, Harry F., Snyderville.
Rhoads, George H., Tobyhanna.
Ritter, Frederick William, Hannersville.
Shull, Joseph J., Stroudsburg.
Singer, J. Anson, East Stroudsburg.
Slee, Richard S., Swiftwater.
Smith, Louis B., Bushkill (Pike Co.).
Sterns, J. H., Delaware Water Gap.
Travis, George S., East Stroudsburg.
Trexler, Jacob A., Brodheadsville.
Wertman, Alvin A., Tannersville.

MONTGOMERY COUNTY SOCIETY.

(Organized January, 1847.)

President..Oliver C. Heffner, Pottstown.
V. Pres....William G. Miller, Norristown.
George W. Stein, Norristown.
Secretary..Harry H. Whitcomb, Norristown.
Cor. Sec...Edgar S. Buyers, Norristown.
Treasurer..Frank C. Parker, Norristown.
Reporter...Edgar S. Buyers, Norristown.
Censors....William McKenzie, Conshohocken.
Henry F. Slifer, North Wales.
J. Newton Hunsberger, Skippack.
Com. on Pub. Policy and Legislation. Philip Y. Eisenberg, Norristown.
J. Newton Hunsberger, Skippack.
George T. Lukens, Conshohocken.

Stated meetings in Charity Hospital, Norristown, at 2:30 P. M. on the following Wednesdays: February 27, March 29, April 24, May 22, June 26, September 18, October 16, November 20, December 18, 1907, January 15, 1908. Election of officers in January.

MEMBERS (81).

Allen, Fredrick B., North Wales.
Anders, Warren Z., Trappe.
Arnold, Herbert A., Ardmore.
Baggs, Albert M., Abington.
Bauman, J. Warren, Lansdale.
Beaver, David R., Conshohocken.
Bennett, Alice, 145 Milton St., Brooklyn, N. Y.
Bergey, David H., 34th & Locust Sts., Philadelphia (Philadelphia Co.).
Bostock, Herbert A., Norristown.
Bronson, T. F., Rosemont.
Brown, Joel B., Oaks.
Buyers, Edgar S., Norristown.
Casselberry, Clarence M., Pottstown.
Cloud, Joseph Howard, Ardmore.
Corson, Elwood M., Norristown.
Corson, Joseph K., Plymouth Meeting.
Corson, Percy H., Plymouth Meeting.
Cross, William A., Jenkintown.
Davis, John, Pottstown.
Dill, Wallace W., 310 High St., Pottstown.
Donnelly, Florence J., Conshohocken.
Drake, Howard H., Norristown.
Egbert, Joseph C., Wayne (Delaware Co.).
Eisenberg, J. Lawrence D., Norristown.
Eisenberg, Philip Y., Norristown.
Ellershaw, Albert, Bridgeport.
Faries, Clarence T., Narberth.
Godfrey, Andrew, Ambler.
Groff, John W., Harleysville.
Hall, William M., Conshohocken.
Hartman, George F., Port Kennedy.
Heffner, Oliver C., Pottstown.
Heysham, Horace B., Norristown.
Highley, George N., Conshohocken.
Horning, Samuel B., Lower Providence.
Hough, Charles B., Ambler.
Hubley, Benjamin F., Norristown.
Hunsberger, J. Newton, Skippack.
Johnson, Harry D., Cheltenham.
Kane, James J., Norristown.
Knipe, Jacob O., Norristown.
Knipe, Reinoehl, Norristown.
Knipe, William H., Limerick.
Krieble, Elmer G., Worcester.
Kuder, William S., U. S. N., Norristown.
Lukens, George T., Conshohocken.
McCafferty, George W., Franklin Building, Johnstown (Cambria Co.).
McCracken, James A., Norristown.
McKenzie, William, Conshohocken.
Mann, Charles H., Bridgeport.
Mewhinney, James C., Spring City (Chester Co.).
Miller, Edgar T., King-of-Prussia.
Miller, William G., Norristown.
Miller, S. Metz, State Hospital, Norristown.
Neiman, Howard Y., Pottstown.
Neipher, Milton K., Wyncote.
Parker, Frank C., Norristown.
Pyfer, Howard F., Norristown.
Rahn, Norman H., Souderton.
Read, Alfred H., Norristown.
Richards, Emma E., 1030 Penn St., Reading, (Berks Co.).
Schwartz, George Jacob, Jenkintown.
Seiple, J. Howard, Center Square.
Seiple, Samuel C., Center Square.
Sherman, Jeanette Hurd, Norristown.
Slifer, Henry F., North Wales.
Sommer, Henry G., Jr., Norristown.
Spear, John C., Norristown.
Stein, George M., Norristown.
Stemple, John Henry, Conshohocken.
Thomas, J. Quincy, Conshohocken.
Tyson, Sarah F., Norristown.
Umstad, John R., Norristown.
Weaver, Joseph K., Norristown.
Weber, C. Zeigler, Norristown.
Weber, Mathias Y., Lower Providence.
Whitcomb, Harry H., Norristown.
Wiley, S. Nelson, Norristown.
Wills, T. Edmund, Pottstown.
Wilson, Franciscus S., Jenkintown.
Wolfe, Mary M., Norristown.

MONTOUR COUNTY SOCIETY.

(Organized June 15, 1874.)

President. . William H. Krickbaum, Danville.
V. Pres. . . . Robert Swift Patten, Danville.
George A. Stock, Danville.
Secretary . . Cameron Shultz, Danville.
Treasurer. . Philip C. Newbaker, Danville.
Reporter. . . Cameron Shultz, Danville.
Censors. . . . Philip C. Newbaker, Danville.
Hugh B. Meredith, Danville.
Edwin A. Curry, Danville.
Com. on Pub. Policy and Legislation. George B. M. Free, Danville.
George A. Stock, Danville.
William H. Krickbaum, Danville.

Stated meetings in Danville the third Friday in January, March, May, June, August, October and November at 8 P. M. Election of officers in January.

MEMBERS (19).

Ashenhurst, Ida M., Danville.
Bitler, Benjamin E., Pottsgrove (Northumberland Co.).
Curry, Edwin A., Danville.
Free, George B. M., Danville.
Hoffa, J. Sidney, Benton (Columbia Co.).
Krickbaum, William H., Danville.
Klase, Harry E., Danville.
Mayberry, Charles B., Retreat (Luzerne Co.).
Meredith, Hugh B., Danville.
Nebinger, Reid, Danville.
Newbaker, Philip C., Danville.
Oglesby, James, Danville.
Patten, Robert Swift, Danville.
Robbins, James E., Danville.
Shultz, Cameron, Danville.
Smith, Gilbert T., Stamford, Conn.
Smith, Nelson M., Riverside (Northumberland Co.).
Snyder, John Howard, Washingtonville.
Stock, George A., Danville.

NORTHAMPTON COUNTY SOCIETY.

(Organized July 10, 1849.)

President. . Sterling D. Shimer, Easton.
V. Pres. . . . Henry C. Pohl, Nazareth.
Secretary . . H. Straub Sherrer, Bangor.
Cor. Sec. . . John E. Fretz, Easton.
Treasurer. . Joseph S. Hunt, Easton.
Reporter. . . S. S. Apple, Easton.
Censors. . . . Charles McIntire, Easton.
John E. Fretz, Easton.
William H. Seip, Bath.
Com. on Pub. Policy and Legislation John C. Keller, Wind Gap.
Charles McIntire, Easton.
Edwin D. Schnabel, Bethlehem.

Meetings shall be held on the third Friday of January, March, May, July, September and November at such places as the society may determine by vote.

MEMBERS (85).

Anderson, George R., Easton.
Apple, Samuel S., Easton.
Babcock, Lewis C., Bethlehem.
Beck, Charles E., Portland.
Beck, Richard H., Hecktown.
Blank, Oscar F., Bethlehem.
Boyle, Patrick F., South Bethlehem
Chase, W. D., Bethlehem.
Collmar, Charles, Easton.
Cope, Thomas, Nazareth.
Cope, William F., Nazareth.
Dillard, Benjamin F., East Bangor.
Dudley, William H., 1639 West Twelfth St., Los Angeles, Cal.
Edwards, H. Threlkeld, South Bethlehem.
Engleman, David, Easton.
Estes, William L., South Bethlehem.
Evans, E. William, Easton.
Field, George B. Wood, Easton.
Fisler, Harry Cattell, Easton.
Fox, Gustav T., Bath.
Fralic, Harry, Chapman's Quarries.
Fretz, John E., Easton.
Green, Edgar M., Easton.
Guiley, A. H. R., Easton.
Hahn, Frank J., Bath.
Harris, Amos J., Hellertown.
Heller, Austin D., Hellertown.
Heller, Henry D., Hellertown.
Hunt, Joseph S., Easton.
Johnson, Irwin N., Pen Argyl.
Kachline, John C., 305 S. Third St., South Bethlehem.
Kasten, William H., Chapman's Quarries.
Keim, Ambrose M., Bethlehem.
Keller, David H., Bangor.
Keller, John C., Wind Gap.
Koch, John G., Petersville.
Koch, Victor J., Nazareth.
Kotz, Adam L., Easton.
Laciar, Henry J., Bethlehem.
Leibert, Harry T., South Bethlehem.
Longacre, Jacob E., Weaversville.
Love, J. King, Easton.
Ludlow, David Hunt, Easton.
McIlhaney, William H., South Easton.
McIntire, Charles, Easton.
Messinger, Victor S., Easton.
Michler, Henry D., Easton.
Miesse, Kate DeW., Easton.
Miller, Elmer C., East Bangor.
Moore, James W., Easton.
Oesterreicher, Edward C., Bethlehem.
Ott, Isaac, Easton.
Pohl, Henry C., Nazareth.
Quiney, James J., Easton.
Reagan, Arthur D., Easton.
Rentzheimer, William H., Hellertown.
Richards, Ellison W., South Easton.
Richards, Oscar M., South Easton.
Roberts, Frederick C., Easton.
Roebuck, John H., Bethlehem.
Roseberry, Edward S., Stone Church.
Schnabel, Edwin D., Bethlehem.
Schmoyer, Herbert John, Bethlehem.
Seem, Albert A., Bangor.
Seip, William H., Bath.
Sheetz, W. W., South Bethlehem.
Sherrer, Frederick A., Easton.
Sherrer, H. Straub, Bangor.
Shimer, Sterling D., Easton.
Stotz, Joseph, Tatamy.
Steinmetz, Edwin G., Hokendauqua (Lehigh Co.).
Stem, Preston E., South Bethlehem.

Stofflet, Clinton F., Pen Argyl.
Stout, Abraham, Bethlehem.
Swan, Tyrus E., Easton.
Swoyer, Oscar D., South Bethlehem.
Thomason, William P. O., Easton.
Uhler, Sydenham P., Easton.
Uhler, Tobias M., 3120 Montgomery Ave., Philadelphia (Philadelphia Co.).
Updegrove, Jacob D., Easton.
Walker, William P., South Bethlehem.
Wilheim, Eugene T., South Bethlehem.
Wilson, John H., 12 West Fourth St., Bethlehem.
Ziegenfuss, Nathan, South Bethlehem.
Zulick, Thomas C., Easton.

NORTHUMBERLAND COUNTY SOCIETY.

(Reorganized November 27, 1903.)

President. .Joseph W. Schoffstall, Sunbury.
V. Pres. . . .Fowler Lyons, Turbutville.
John Brice Cressinger, Sunbury.
Secretary. .Horatio W. Gass, Sunbury.
Treasurer. .Charles H. Swenk, Sunbury.
Reporter. . .Horatio W. Gass, Sunbury.
Censors. . . .P. Joseph Faughnan, Locust Gap.
Harvey M. Becker, Sunbury.
Mary McKay Wenck, Sunbury.
Com. on Pub.
Policy and
Legislation. John Brice Cressinger, Sunbury.
Horatio W. Gass, Sunbury.
Stoddard Somers Burg, Northumberland.

Stated meetings shall be held on the first Friday of January, March, May, July, September, and November of each year, in Sunbury, or other places as may be determined by vote of the society. Election of officers in January.

MEMBERS (22).

Allison, Charles Edward, Elysburg.
Becker, Harvey M., Sunbury.
Bickel, Edwin Forest, Shamokin.
Bogar, Joseph E., Herndon.
Burg, Stoddard Somers, Northumberland.
Campbell, Charles F., Sunbury.
Cressinger, John Brice, Sunbury.
Drumheller, Francis E., Sunbury.
Faughnan, P. Joseph, Locust Gap.
Gass, Horatio W., Sunbury.
Graham, William T., Sunbury.
Kerchner, Benjamin L., Dalmatia.
Lyons, Fowler, Turbutville.
Maurer, James M., Shamokin.
Raker, Frederick D., Shamokin.
Renn, Philip H., Sunbury.
Schoch, Lester Edgar, Shamokin.
Schoffstall, Joseph W., Sunbury.
Smith, Ellis A., Sunbury.
Swenk, Charles H., Sunbury.
Vastine, John H., Shamokin.
Wenck, Mary McKay, Sunbury.

PERRY COUNTY SOCIETY.

(Organized November 19, 1849.)

President. .W. Homer Hoopes, Newport.
V. Pres. . . .Edward E. Moore, New Bloomfield.
W. J. Allen, Landisburg.
Secretary. .A. Russell Johnston, New Bloomfield.
Treasurer. .David B. Milliken, Landisburg.
Reporter. . .Luther M. Shumaker, Elliottsburg.
Censors. . . .W. J. Allen, Landisburg.
John A. Sheibly, Shermansdale.
Winfred J. Wright, Duncannon.
Com. on Pub.
Policy and
Legislation. David B. Milliken, Landisburg.
Frank A. Gutshall, Blain.
James B. Eby, Newport.

Annual meeting at New Bloomfield second week in January. Other meetings at places and times selected; at least four during the year.

MEMBERS (19).

Allen, W. J., Landisburg.
Anderson, Benjamin H., Andersonburg.
Bryner, John H., Ickesburg.
Eby, James B., Newport
Gutshall, Frank A., Blain.
Hoopes, W. Homer, Newport.
Johnston, A. Russell, New Bloomfield.
Milliken, David B., Landisburg.
Moore, Edward E., New Bloomfield.
Orris, Henry O., Newport.
Patterson, Frank, 2520 Broad Ave., Altoona (Blair Co.).
Ritter, Alburtis T., Loysville.
Shearer, Alfred L., Duncannon.
Sheibly, John A., Shermansdale.
Shumaker, Luther M., Elliottsburg.
Strickler, Melchoir B., Washington, D. C.
Thompson, James F., Liverpool.
VanDyke, Arthur D., Marysville.
Wright, Winfred J., Duncannon.

PHILADELPHIA COUNTY SOCIETY.

(Organized 1849. Incorporated October 2, 1877.)

(Philadelphia is the P. O. when street address only is given.)

President. .James B. Walker, 1617 Green St.
V. Pres. . . .William S. Newcomet, 3501 Baring St.
Joseph O'Malley, 2228 S. Broad St.
Wendell Reber, 1212 Spruce St.
Robert H. Chase, Frankford Insane Asylum, Frankford.
Maurice J. Karpeles, 60 W. Chelton Ave., Germantown.
Franklin Brady, 1815 Frankford Ave.
Secretary. .William S. Wray, 114 S. Eighteenth St.
Asst. Sec. . Ross H. Skillern, S. E. Cor. Thirty-fourth and Race Sts.
Treasurer. .Collier L. Bower, 261 S. Fifteenth St.
Reporter. . .R. Max Goepp, 332 S. Fifteenth St.
Censors. . . .Charles A. E. Codman, S. E. Cor. Forty-second and Spruce Sts., 5 years.
Frederick P. Henry, 1635 Locust St., 4 years.
Judson Daland, 317 S. Eighteenth St., 3 years.

Jay F. Schamberg, Secretary, 1922 Spruce St., 2 years.
William M. Welch, 1411 Jefferson St., 1 year.

Directors. . .Jay F. Schamberg, Chairman, 1922 Spruce St., 1 year.
Joseph M. Spellissy, 110 South Eighteenth St., 1 year.
Frank C. Hammond, 1419 Tioga St., 1 year.
Clara Marshall, 258 S. Sixteenth St., 2 years.
J. Gurney Taylor, 6041 Drexel Road, 2 years.

Publication Committee. John M. Swan, Editor and Chairman, 3713 Walnut St., 3 years.
J. Dutton Steele, N. E. Cor. Fortieth and Locust Sts., 2 years.
Francis T. Stewart, 311 South Twelfth St., 1 year.

Committee on Increase of Membership. . . . . . .B. Franklin Royer, Twenty-second St. and Lehigh Ave., 5 years.
James H. Baldwin, Chairman, 1527 Morris St., 4 years.
David Riesman, 1624 Spruce St., 3 years.
John H. Jopson, 334 South Sixteenth St., 2 years.
Wendell Reber, 1212 Spruce St., 1 year.
Also the Chairman of the Membership Committee of each Branch.

Com. on Pub. Policy and Legislation. Howard F. Hansell, 1528 Walnut St., 5 years.
James M. Anders, 1605 Walnut St., 4 years.
Roland G. Curtin, Chairman, 22 S. Eighteenth St., 3 years.
L. Webster Fox, 1304 Walnut St., 2 years.
S. Solis Cohen, 1525 Walnut St., 1 year.

Stated meetings for business the third Wednesday of January, April, June, and October, at 8:15 P. M. Election of officers in January. Scientific meetings the second and fourth Wednesdays of each month except July and August, at 8:30 P. M., all at the College of Physicians, northeast corner of Thirteenth and Locust Sts.

NORTH BRANCH.

Chairman. .Frank C. Hammond, 1419 Tioga St.
Clerk. . . . .Horace K. Regar, 1909 N. Thirteenth St.

Meets at 1611 Columbia Avenue on the third Tuesday night.

SOUTH BRANCH.

Chairman. .Samuel W. Gadd, 1222 S. Tenth St.
Clerk. . . . . .James H. Baldwin, 1527 Morris St.

Meets the fourth Friday night at Northwest corner of Broad and Federal Streets.

KENSINGTON BRANCH.

Chairman. .Henry G. Godfrey, 2056 E. Cumberland St.
Clerk. . . . . .William T. Hamilton, 933 Huntingdon St.

Meets the first Friday night at the Lehigh Avenue Branch of Free Library, Sixth Street and Lehigh Avenue.

WEST PHILADELPHIA BRANCH.

Chairman. .William Evans, 4009 Chestnut St.
Clerk. . . . . .Charles A. E. Codman, Southeast Corner of Spruce and Forty-second Sts.

Meets the Friday following the second Wednesday at Free Library, Fortieth and Walnut Streets.

NORTHEAST BRANCH.

Chairman. .Robert H. Chase, Frankford Insane Asylum, Frankford.
Clerk. . . . . .William H. Good, 134 E. Wyoming Ave.

Meets in Frankford Branch Free Library, Frankford Avenue, and Overington Street, on the third Monday evening.

NORTHWEST BRANCH.

Chairman. .Robert L. Pitfield, 5211 Wayne Ave.
Clerk. . . . . .Howard D. Geisler, 202 High St.

Meets first Thursday at Y. M. C. A. Hall, Germantown Avenue, above Rittenhouse Street.

All Branches meet at 9 P. M. monthly, except July and August.

MEMBERS (1155).

Abbott, Alexander C., 4229 Baltimore Ave.
Adams, Charles T., 5701 Girard Ave.
Adams, J. Howe, 324 S. Twenty-fourth St.
Adler, Lewis H., Jr., 1610 Arch St.
Alburger, Henry R., "The Covington," Thirty-seventh and Chestnut Sts.
Allen, Alfred Reginald, 111 S. Twentieth St.
Allen, Francis Olcott, Jr., 323 South Sixteenth St.
Allen, Jesse Hall, 1435 Poplar St.
Allen, Luther M., 3100 Wharton St.
Allen, Mary E., 1241 South Forty-ninth St.
Allis, Oscar H., 1604 Spruce St.
Allyn, Herman B., 501 South Forty-second St.
Alrich, William, Carpenter and Main Sts., Germantown.
Anders, Howard S., 1836 Wallace St.
Anders, James M., 1605 Walnut St.
Anders, J. Wesley, 1329 W. Somerset St.
Angeny, Ferdinand G., 907 West Lehigh Ave.
Ankeney, Clinton R., 803 North Twenty-fourth St.
Anspach, Brooke M., 4813 Baltimore Ave.
Apeldorn, Ernest F., 2113 N. Howard St.
Applegate, John C., 3540 N. Broad St.
Appleman, Leighton F., 1708 Pine St.
Arnold, J. O., 2503 North Eighteenth St.
Artelt, Henry, 1521 North Eighth St.
Ash, H. St. Clair, 1335 Fairmount Ave.
Asher, Joseph M., 1335 North Broad St.

Ashhurst, Astley P. C., 2000 De Lancey St.
Ashton, Thomas G., 1814 South Rittenhouse Square.
Ashton, W. Easterly, 2011 Walnut St.
Astley, G. Mason, 5211 Girard Ave.
Atkinson, William B., 864 East Chelton Ave., Germantown.
Attix, James C., 2355 N. Thirteenth St.
Babbitt, James A., 121 South Eighteenth St.
Babcock, W. Wayne, 3302 North Broad St.
Bachman, Gustavus A., 2016 North Second St.
Bacon, H. Augustus, 1521 Girard Ave.
Bacon, John, Torresdale, Philadelphia.
Baer, Benjamin F., 2025 Chestnut St.
Baer, Benjamin F., Jr., 1819 Chestnut St.
Bailey, Thomas W., 1710 Morris St.
Bainbridge, Empson H., 1505 Poplar St.
Baker, A. George, 404 Susquehanna Ave.
Baker, Frank K., 3019 Diamond St.
Baker, George F., 421 Walnut St.
Baldwin, James H., 1527 Morris St.
Baldwin, Kate W., 320 South Eleventh St.
Baldy, John M., 2219 De Lancey St.
Ballentine, Percy L., 1836 S. Seventeenth St.
Ball, Joseph P., 4445 Frankford Ave.
Balliet, Tilgham M., 3709 Powelton Ave.
Banes, S. Thompson, 845 North Broad St.
Banks, William B., 736 North Nineteenth St.
Barcus, Adolph L., 923 North Eighth St.
Bardsley, G. Ashton, 2111 North Howard St.
Bare, Horace C., 2240 Fairmount Ave.
Barker, T. Ridgeway, 1703 Spruce St.
Barnard, Everett P., 2146 South Broad St.
Barnes, Charles S., 41 South Nineteenth St.
Barrett, William C., 3939 Powelton Ave.
Bartle, Henry J., 2317 Oxford St.
Bartlett, H. Frances, 4028 Chestnut St.
Barton, Isaac, 137 North Sixteenth St.
Batroff, Warren C., 2531 N. Sixteenth St.
Bauer, Charles, 929 North Seventh St.
Bauer, L. Demme, 715 North Fifth St.
Bauer, Louis G., 261 High St.
Bauer, Marie L., 1613 Fairmount Ave.
Bauer, Rudolph F., 1514 Fairmount Ave.
Baum, Charles, 1828 Wallace St.
Baxter, Hart B., 1422 Christian St.
Beardsley, Edward J. G., 2030 Chestnut St.
Beardwood, Matthew, Jr., 569 Jamestown St.
Beates, Henry, Jr., 260 S. Sixteenth St.
Beck, J. Howard, 1937 Fairmount Ave.
Behrend, Moses, 1331 North Franklin St.
Bell, Edward H., 739 Spruce St.
Bemis, Royal W., 2512 North Fifth St.
Benner, Henry D., 1443 South Broad St.
Bennett, William H., 1837 Chestnut St.
Berens, Bernard, 2041 Chestnut St.
Berens, Conrad, 1707 Arch St.
Berlet, James F., 830 North Fifth St.
Bernardy, Henry L., 221 S. Seventeenth St.
Bernd, Leo H., 324 South Nineteenth St.
Bernheim, Albert, 1411 Spruce St.
Bethel, John Percy, 2116 Jefferson St.
Beyea, Henry D., 1734 Spruce St.
Beyer, John J., 618 West Norris St.
Biddle, Alexander W., 265 South Twenty-second St.
Biedert, Charles C., 1531 N. Seventeenth St.
Biggs, Montgomery H., Rutherford Hospital, Rutherford, N. C.
Birney, Herman H., 4016 Chestnut St.
Blackburn, Albert E., 3813 Powelton Ave.
Blakeslee, Walter H., Broad St. Station, Fifteenth and Walnut Sts.
Bland, Pascal Brooke, 2102 South Broad St.
Bliss, Arthur A., 117 South Twentieth St.
Bloom, Homer C. 1433 Walnut St.
Bobb, Wallace G., 2444 North Sixth St.
Bochroch, Max H., 937 North Eighth St.
Boenning, Henry C., 2030 Green St.
Boger, John A., 2213 North Broad St.
Bold, Valentine J., 3206 North Fifth St.
Bolin, Jesse Albert, 3517 Longshore St.
Bolling, Robert H., Chestnut Hill, Philadelphia.
Bolton, Samuel, 4703 Leipert St.
Bonaffon, Samuel A., 3439 Walnut St.
Boom, Harry H., 1212 Master St.
Boon, W. Frank, 215 Green Lane, Manayunk.
Borsch, John L., 1310 Walnut St.
Boston, L. Napoleon, 1531 South Broad St.
Bower, Collier L., 261 South Fifteenth St.
Bower, Franklin S., 3318 Germantown Ave.
Bowes, T. John, 5115 Spruce St.
Bowman. Frank L., 1711 South Thirteenth St.
Bowyer, Maude A., 1503 Locust St.
Boyd, George M., 1909 Spruce St.
Boyer, Arthur T., 1436 Lombard St.
Boyer, D. Pellman, 4747 Richmond St.
Boyer, Henry Percival, 4602 Baltimore Ave.
Boyer, Merle S., 2827 Girard Ave.
Bradford, T. Hewson, 125 S. Eighteenth St.
Bradley, H. Joseph, 2827 Wharton St.
Bradley, William N., 1532 South Sixth St.
Brady, Franklin, 1815 Frankford Ave.
Brav, Aaron, 1408 S. Sixth St.
Brav, Herman A., 926 North Franklin St.
Bready, Conrad R., 1921 N. Seventeenth St.
Bready, William R., Jr., 1857 N. Eleventh St.
Brick, J. Coles, 1210 Spruce St.
Bricker, Charles E,, 2739 Girard Ave.
Bridgett, Charles R., 5019 Woodland Ave.
Brister, Samuel, 833 S. Third St.
Brittingham, James D., 4106 Girard Ave.
Brody, Myer, 1751 Frankford Ave.
Bromley, John L., 1532 North Fifteenth St.
Brooks, Macy, 314 South Fifteenth St.
Brown, Elmer E., 1415 Tasker St.
Brown, Frederick K., 1236 South Fourth St.
Brown, H. MacVeagh, 4608 Baltimore Ave.
Brown, Samuel H., 1901 Mt. Vernon St.
Brubaker, Albert P., 105 N. Thirty-fourth St.
Brunet, John E., 2038 North Broad St.
Bryan, Henry N., 144 North Twentieth St.
Bryan, J. Roberts, 4200 Chestnut St.
Buchanan, Mary, 324 South Nineteenth St.
Buckby, Wilson, 1744 Diamond St.
Buckland, E. Harley, 1524 Chestnut St.
Buckley, Albert C., 1705 Fifteenth St.
Bunce, Maurice A., 1320 North Eighteenth St.
Bundy, Elizabeth R., 1720 Chestnut St.
Burk, Charles M., 2110 Vine St.
Burke, Joseph J., 2011 Christian St.
Burns, Lewis J. I., 2105 N. Sixteenth St.
Burns, R. Bruce, 4321 Frankford Ave.
Burns, Stillwell C., 1326 Spring Garden St.
Burns, William A., 1326 Spring Garden St.
Burr, Charles W., 1327 Spruce St.
Butler, Margaret F., 2127 Green St.
Butler, Ralph, 1824 Chestnut St.
Butt, Miriam M., 1509 Poplar St.

Butte, Harley J., 2047 Christian St.
Byrne, Thomas J., 1517 South Broad St.
Cadwalader, Charles E., 240 South Fourth St.
Cahall, William C., 154 West Chelton Ave., Germantown.
Caldwell, Alexander, 1813 Christian St.
Callahan, Andrew, 1635 South Thirteenth St.
Cameron, George A., Greene St. and School Lane, Germantown.
Cameron, John L., 1500 Girard Ave.
Camp, C. D., 1331 Christian St.
Campbell, O. Clayman, 2100 South Broad St.
Carey, Harry K., 2230 North Sixteenth St.
Carmony, Henry S., 366 Green Lane, Roxborough.
Carnett, John B., 318 South Fifteenth St.
Carpenter, Herbert B., 1805 Spruce St.
Carpenter, Howard C., 1805 Spruce St.
Carpenter, John T., 1624 Walnut St.
Carr, Charles D., 350 S. Sixteenth St.
Carrier, Frederick, 40 North Sixteenth St.
Carroll, William, 617 South Sixteenth St.
Carruthers, Georgiana H., 3064 Frankford Ave.
Cassidy, Paul B., 817 South Twenty-first St.
Cattell, Henry W., 3709 Spruce St.
Chance, Burton K., 235 South Thirteenth St.
Chandlee, William Herbert, 4930 Frankford Ave.
Chandler, Swithin, 2010 Chestnut St.
Chapin, John B., Forty-fourth and Market Sts.
Chapin, Laura Stitzer, 1724 Diamond St.
Chase, Robert H., Frankford Insane Asylum, Frankford.
Chestnut, James C., 1817 Frankford Ave.
Christian, Hilary M., 1344 Spruce St.
Clark, B. F. R., Narberth (Montgomery Co.).
Clark, John G., 2017 Walnut St.
Clarke, George G., 1839 N. Seventeenth St.
Clausen, Joseph R., 1500 North Fifty-fifth St.
Claxton, Charles, 5137 Morris St., Germantown.
Cleemann, Richard A., 2135 Spruce St.
Cleveland, F. Mortimer, 200 North Fifty-second St.
Coates, George M., 334 South Nineteenth St.
Codman, Charles A. E., S. E. Cor. Forty-second and Spruce Sts.
Cogill, Lida Stewart, 869 N. Forty-first St.
Cohen, J. Solis, 1824 Chestnut St.
Cohen, Myer Solis, 4110 Parkside Ave.
Cohen, S. Solis, 1525 Walnut St.
Coles, Stricker, 249 South Fifteenth St.
Coley, Thomas Luther, 257 S. Twenty-first St.
Colgan, James F. E., 1022 North Fifth St.
Collins, Foster K., 2462 N. Thirty-second St.
Conard, Thomas E., 1855 N. Seventeenth St.
Conner, Annie L., 7056 Germantown Ave.
Connor, Frank M., 2602 N. Seventeenth St.
Cooke, Dudley T., 1536 South Broad St.
Cooke, Edwin S., 1633 Christian St.
Cooper, J. Cardeen, 1016 Lehigh Ave.
Cope, Thomas A., 6504 Germantown Ave.
Coplin, William M. L., 1629 South Broad St.
Cornell, Walter S., 1728 Chestnut St.
Coulter, Benjamin F., 1910 North Twenty-second St.
Costello, Michael J., 5035 Wayne Ave.
Craig, Clark R., 331 South Twelfth St.
Craig, Frank A., 732 Pine St.
Crandall, Thomas V., 1910 Spring Garden St.
Craney, Joseph P., 1900 Spring Garden St.
Crawford, J. Kinnier, 2410 North Broad St.
Crawford, James Rea, 5602 Lansdowne Ave.
Creuger, Edward A., 1123 N. Forty-first St.
Custer, Ella B., 137 Green Lane, Manayunk.
Croskey, John W., 3325 Powelton Ave.
Cruice, John M., 1815 Spruce St.
Cryer, Matthew H., 1623 Walnut St.
Cullinan, Henry M., 1955 Locust St.
Currie, Charles A., West Walnut Lane, Germantown.
Currie, Thomas R., 113 East Cumberland St.
Curtin, Roland G., 22 South Eighteenth St.
Custor, David D., 137 Green Lane, Manayunk.
Da Costa, John C., 1022 Spruce St.
Da Costa, John C., Jr., 1022 Spruce St.
Da Costa, J. Chalmers, 2045 Walnut St.
Daland, Judson, 317 South Eighteenth St.
Darrach, James, 5923 Greene St., Germantown.
Davidson, Charles C., 200 South Twelfth St.
Davis, Alvah M., 25 High St., Germantown.
Davis, David, 1313 East Susquehanna Ave.
Davis, Edward P., 250 South Twenty-first St.
Davis, Gwilym G., 255 South Sixteenth St.
Davisson, Alexander H., Ardmore (Montgomery Co.).
Deal, John C., 5301 Haverford Ave.
Deaver, Henry C., 1534 North Fifteenth St.
Deaver, John B., 1634 Walnut St.
Deaver, Richard W., 6105 Germantown Ave.
Dehoney, Howard, 237 S. Thirteenth St.
Deichler, L. Waller, 748 North Forty-first St.
Dercum, Clara T., 810 North Broad St.
Dercum, Francis X., 1719 Walnut St.
Despard, Duncan L., 1900 Chestnut St.
Dever, Francis J., 2025 Columbia Ave.
Devitt, B. F., 912 North Fourth St.
Devitt, William, 135 Green Lane.
Dewey, J. Hiland, 1436 Diamond St.
Dick, John W., 1945 Christian St.
Diez, M. Louise, 248 South Fifty-second St.
Dillard, Henry K., Jr., 234 S. Twentieth St.
Dixon, Samuel G., Ardmore (Montgomery Co.).
Donnellan, Patrick S., Redlands, California.
Dorland, William A. N., 128 South Seventeenth St.
Dorr, Henry I., 67 Milk St., Boston, Mass.
Dorrance, George M., 1716 Locust St.
Dorset, Rae S., 1105 North Fortieth St.
Dougherty, John G., 3625 Chestnut St.
Dougherty, Sherborne W., 256 S. Sixteenth St.
Douglas, Malcolm, 1814 Tioga St.
Downs, Norton, 215 West Walnut Lane, Germantown.
Downs, Thomas A., 409 North Forty-first St.
Doyle, George F., 1305 Locust St.
Drake, Elwood L., 2762 Pratt St.
Drein, William Clifton, 1438 N. Fifteenth St.
Dripps, John H., 1812 North Eleventh St.
Drummond, Winslow, 1824 N. Thirteenth St.
Dubbs, John H., 2722 North Twelfth St.
Duer, Edward L., 1606 Locust St.
Duhring, Louis A., 3322 Walnut St.
Dukes, John L., 344 N. Fifty-second St.
Dulles, Charles W., 4101 Walnut St.
Dugan, William J., 2224 S. Broad St.

Duncan, Harry C., 2721 W. Lehigh Ave.
Dundore, Claude A., 2012 Master St.
Dwight, Mark B., 4025 Walnut St.
Dye, Frank H., 1830 Girard Ave.
Ernshaw, Henry C., Bryn Mawr (Montgomery Co.).
Eaton, Albert M., 2017 North Thirteenth St.
Eckfeldt, John W., 245 North Sixty-fifth St.
Eckman, Philip N., 624 N. Twenty-second St.
Edsall, David L., 1432 Pine St.
Eft, Frederick, 1340 North Thirteenth St.
Egbert, Seneca, 4844 Springfield Ave.
Eichman, Edward A., 440 Lyceum Ave.
Eisenhardt, William G., 1926 North Fifth St.
Ekwurzel, William, 4531 Frankford Ave.
Elder, Frank H., 1523 Arch St.
Eldridge, Clarence S., 2258 N. Seventeenth St.
Ellinger, Theophilus J., 737 N. Forty-first St.
Ellis, Aller G., 2524 North Seventeenth St.
Elmer, Walter G., 1801 Pine St.
Ely, Thomas C., 2041 Green St.
Embery, Frank, 4662 Frankford Ave.
Enoch, George F., Holmesburg, Phila.
Erck, Theo. A., 251 South Thirteenth St.
Eshner, Augustus A., 1019 Spruce St.
Evans, William, 4009 Chestnut St.
Evans, Thomas H., 3353 North Front St.
Everitt, Ella B., 1807 Spruce St.
Faries, Randolph, 2007 Walnut St.
Farley, Joseph, 1545 South Thirteenth St.
Farr, Clifford B., 326 South Seventeenth St.
Farr, William W., 7432 Boyer St., Mt. Airy, Philadelphia.
Farrar, Joseph D., 1001 North Sixth St.
Faught, Francis Ashley, 5231 Baltimore Ave.
Feldstein, Sidney L., 1626 Diamond St.
Felt, Carle L., 1525 Girard Ave.
Fenton, Thomas H., 1319 Spruce St.
Ferguson, Albert D., 1549 N. Thirteenth St.
Ferguson, George M., 706 S. Forty-ninth St.
Ferguson, William N., 125 W. Susquehanna Ave.
Ferris, Francis S., 1424 South Broad St.
Fetterman, Wilfred B., 7047 Germantown Ave.
Fetterolf, Daniel Webster, 3310 Wallace St.
Fetterolf, George, 330 South Sixteenth St.
Fiet, Harvey J., 2152 North Fourth St.
Fife, Charles A., 1927 Chestnut St.
Finck, Edward B., 1120 Girard St.
Fischelis, Philip, 828 North Fifth St.
Fisher, Frank, 1911 Arch St.
Fisher, Henry, 2345 East Dauphin St.
Fisher, Henry M., 1027 Pine St.
Fisher, Herbert P., 5324 Wayne Ave., Germantown.
Fisher, John M., 222 South Fifteenth St.
Fisher John V., 6027 Lombard St.
Fisher, Mary, 1911 Arch St.
Fleming, Thomas J., 653 N. Twenty-second St.
Flick, Lawrence F., 736 Pine St.
Flynn, J. Cajetan, 1225 N. Sixth St.
Foltz, J. Clinton, Summit St., Chestnut Hill.
Ford, Walter A., Northeast Corner Fifteenth and Locust Sts.
Formad, Marie K., 927 North Broad St.
Forst, John R., 166 West Coulter St., Germantown.
Foulkrod, Collin, 4022 Chestnut St.
Fox, Charles W., 1822 South Rittenhouse Square.
Fox, Herbert, 4443 Spruce St.
Fox, L. Webster, 1304 Walnut St.
Fox, William W., 1239 West Lehigh Ave.
Fraley, Frederick, 253 S. Thirteenth St.
Francine, Albert P., 218 S. Fifteenth St.
Frankish, John K., 130 West Mt. Pleasant Ave., Mt. Airy, Philadelphia.
Franklin, Clarence P., 121 S. Sixteenth St.
Franklin, Marcus, 1518 North Broad St.
Franklin, Melvin M., 1427 North Broad St.
Fraser, Hugh D., 6614 Woodland Ave.
Frazier, Charles H., 1724 Spruce St.
Freeman, Walter J., 1832 Spruce St.
Freeman, Walter S., 2126 N. Ninth St.
Fretz, Howard G., 1202 Erie Ave.
Freund, Henry H., 1310 South Fifteenth St.
Friebis, George, 1906 Chestnut St.
Fritz, W. Wallace, 1600 Summer St.
Fulton, Z. M. Kempton, 1111 W. Lehigh Ave.
Furbush, Charles Lincoln, 4301 Spruce St.
Fussell, M. Howard, 189 Green Lane, Manayunk.
Gadd, Samuel W., 1222 South Tenth St.
Gans, Emmanuel S., 711 North Franklin St.
Gans, S. Leon, 1618 North Fifteenth St.
Gasslein Richard J., 5630 Girard Ave.
Gaston, Ida E., 2833 Diamond St.
Geisler, Howard D., 202 High St., Germantown.
Gerhard, Samuel P., 639 North Sixteenth St.
Getchell Francis H., 1432 Spruce St.
Gibb, Joseph S., 1907 Chestnut St.
Gibbon, John H., 1608 Spruce St.
Gilbride, John J., 2412 North Sixth St.
Gildersleve, George Henry, 525 N. Sixth St.
Gildersleeve, Nathaniel, Hygiene Laboratory, Thirty-fourth St., below Walnut.
Gile, Ben Clark, 1728 Chestnut St.
Gilliland, Samuel H., Marietta (Lancaster Co.).
Gilpin, Sherman F., 5501 Girard Ave.
Girvin, John H., 3924 Walnut St.
Githens, Thomas Stotesbury, 1315 Pacific Ave., Atlantic City, N. J.
Githens, William H. H., 1337 Pine St.
Gittings, J. Claxton, 3942 Chestnut St.
Given, Ellis E. W., 2714 Columbia Ave.
Gleason, E. Baldwin, 2033 Chestnut St.
Godfrey, Henry G., 2056 East Cumberland St.
Goepp, R. Max, 332 S. Fifteenth St.
Goldberg, Harold G., 1733 Chestnut St.
Good, Albert P., 622 North Forty-eighth St.
Good, William H., 134 East Wyoming Ave.
Goodell, W. Constantine, 300 South Thirteenth St.
Goodwin, A. Helena, 3925 Chestnut St.
Goodwin, Warren C., 3742 Powelton Ave.
Gordon, Alfred, 1430 Pine St.
Goss, Charles, 603 Brown St.
Gould, George M., 1722 Walnut St.
Graf, Edmund L., 5214 Spruce St.
Graham, Edwin E., 1713 Spruce St.
Graham, John, 326 South Fifteenth St.
Grayson, Charles P., 251 South Sixteenth St.
Greene, William H., Northwest Corner Sixteenth and Arch Sts.
Greenewalt, Frank L., 1424 Master St.
Greenwald, Daniel F., 2417 Master St.
Griffith, J. P. Crozer, 1810 Spruce St.

Grim, Ella Williams, 46 North Fortieth St.
Grime, Robert T., 618 South Seventeenth St.
Grimes, Robert Bruce, 1607 S. Tenth St.
Griscom, Mary Wade, 253 S. Seventeenth St.
Groff, Charles A., 222 North Thirteenth St.
Groff, Henry C., Southeast Corner Broad and Venango Sts.
Guthrie, D. Clinton, 722 N. Fortieth St.
Gwyn, Norman B., 23 South Twenty-first St.
Hager, Stella, 443 N. Fifty-second St.
Haig, Charles R., Jr., 1400 N. Nineteenth St.
Hale, George, 4428 Paul St., Frankford.
Hall, Annie Bartram, 1415 N. Seventeenth St.
Hall, L. Brewer, 139 North Fifteenth St.
Hamill, Samuel McC., 1822 Spruce St.
Hamilton, William T., 933 Huntingdon St.
Hammer, A. Wiese, 902 North Forty-first St.
Hammond, Frank C., 1419 Tioga St.
Hammond, Levi J., 1222 Spruce St.
Hammond, Wilber C., 655 North Twelfth St.
Hand, Alfred, Jr., 1724 Pine St.
Hanna, George C., 4840 Frankford Ave.
Hanna, Hugh, 2843 Diamond St.
Hansell, Howard F., 1528 Walnut St.
Harbaugh, Charles H., 1143 South Broad St.
Harbridge, Delamere Forest, 258 South Fifteenth St.
Hare, Hobart A., 1801 Spruce St.
Harkness, J. Linton, 1338 Spruce St.
Harland, William G. B., 233 South Seventeenth St.
Harte, Richard H., 1508 Spruce St.
Harlan, George C., 1700 Walnut St.
Harris, Frank D., 2315 North Seventeenth St.
Hartzell, Milton B., 3644 Chestnut St.
Hatfield, Charles J., 258 South Eighteenth St.
Havens, John G. W., 1914 Arch St.
Hawke, Wilford W., Thirty-fourth and Pine Sts.
Hawley, Benjamin F., 3402 Baring St.
Hay, Charles M., 4106 Girard Ave.
Head, Joseph, 1500 Locust St.
Hearn, Charles S., 1632 Chestnut St.
Hearn, Marion, 700 N. Fortieth St.
Hearn, William P., 1120 Walnut St.
Hearn, W. Joseph, 1120 Walnut St.
Heed, Charles R., 1508 N. Tenth St.
Heisler, John C., 3829 Walnut St.
Heller, Edwin A., 934 North Franklin St.
Henry, Frederick P., 1635 Locust St.
Henry, J. Norman, 252 South Sixteenth St.
Herbert, J. Frederick, 1516 Locust St.
Herchelroth, J. Grant, 4837 Baltimore Ave.
Hermance, William Oakley, 1934 Pine St.
Herrman, Max F., 3702 Old York Road.
Hertz, Silas G., 1113 Chestnut St.
Hess, Robert J., 610 Fairmount Ave.
Hewson, Addinell, 2120 Spruce St.
Hickey, Stefano J., 1636 North Fifteenth St.
Hickman, Napoleon, 324 South Sixteenth St.
Higbee, William S., 1703 South Broad St.
Higgins, Frank J., 2229 North Broad St.
Hildrup, Josephine W., 119 S. Seventeenth St.
Hill, G. Alvin, 1524 Chestnut St.
Hill, Howard Kennedy, 1715 Spruce St.
Hinkle, Albert G. B., 1300 Spring Garden St.
Hinkle, William M., 1323 N. Thirteenth St.
Hinsdale, Guy, Hot Springs, Virginia.
Hirsch, Charles S., 332 South Nineteenth St.
Hirschler, Rose, 1911 Diamond St.
Hirsch, Abram B., 1711 Diamond St.
Hirst, Barton C., 1821 Spruce St.
Hirst, John Cooke, 1618 Pine St.
Hitschler, William A., 1212 Spruce St.
Hoban, Charles J., 1609 South Broad St.
Hobensack, J. Rex, 1706 Columbia Ave.
Holland, James W., 2006 Chestnut St.
Hollingshead, Irving W., 123 South Eighteenth St.
Hollopeter, William C., 1428 North Broad St.
Holloway, Thomas Beaver, 1928 Chestnut St.
Holmes, E. Burwell, Municipal Hospital, Twenty-second St. and Lehigh Ave.
Holt, Jacob F., 1935 Poplar St.
Hooker, Richard S., 2006 East Cambria St.
Hopkinson, Oliver, 1424 Spruce St.
Horgan, Edward, 1833 Chestnut St.
Horne, S. Hamill, 1433 Walnut St.
Horwitz, Orville, 1721 Walnut St.
Hosmer, Charles M., 3949 Baltimore Ave.
Hosmer, H. M., Episcopal Hospital, Front and Lehigh Aves.
Houghton, Charles W., 2031 North Front St.
Howard, E. Clarence, 508 South Tenth St.
Hoyt, Daniel M., 3604 Chestnut St.
Hudson, Harry, 3228 North Fifteenth St.
Hughes, Donnel, 4003 Chestnut St.
Hughes, William E., 3945 Chestnut St.
Hulshizer, Greene R., 1517 N. Fifteenth St.
Hume, John, 900 South Forty-ninth St.
Hungerbuehler, John C., 1530 N. Franklin St.
Hunsicker, Charles H., 1614 N. Broad St.
Hurlock, Frank I., 2831 Diamond St.
Huston, David T., 256 South Fifteenth St.
Hutchinson, James P., 1702 Locust St.
Illman, G. Morton, 3235 N. Fifteenth St.
Ingle, Henry B., S. E. Cor. Eighteenth and Mt. Vernon Sts.
Ingraham, S. Cooke, 125 Sumac St.
Irwin, James A., 2019 South Broad St.
Irwin, William, 634 Snyder Ave.
Jacob, Lewis H., 135 West Susquehanna Ave.
Jacobs, Francis B., 334 South Nineteenth St.
Jackson, Algernon B., 772 South Fifteenth St.
Johnson, Russel H., 8 W. Summit St., Chestnut Hill, Philadelphia.
Johnson, William Sidney, 4309 Baltimore Ave.
Johnson, William N., 6460 Germantown Ave.
Jenks, Horace H., Pennsylvania Hospital, Eighth and Spruce Sts.
Jones, Charles J., 1009 North Sixth St.
Jones, Eleanor C., 1531 North Fifteenth St.
Jopson, John H., 334 South Sixteenth St.
Jump, Henry D., 4634 Chester Ave.
Jurist, Louis, 916 North Broad St.
Kalteyer, Frederick J., 214 S. Fifteenth St.
Kamerly, E. Forest, 1130 Spruce St.
Kane, J. A. Bayard, 211 South Seventeenth St.
Karpeles, Maurice J., 60 West Chelton Ave., Germantown.
Karsner, Howard T., 1320 S. Broad St.
Kassabian, Mihran K., 1831 Chestnut St.
Katzenstein,George P., 1704 N. Eighteenth St.
Kaufman, A. Spencer, 2040 W. Cumberland St.
Kearns, William, 2574 Memphis St.
Keeler, J. Clarence, 4059 Spruce St.
Keely, Robert N., Browns Mills In-the-Pines, N. J.

Keen, William W., 1729 Chestnut St.
Keiser, Elmer E., 6933 Tulip St.
Keller, Albert P., 136 Race St.
Kelly, Aloysius O. J., 1911 Pine St.
Kelly, Francis J., 407 South Forty-second St.
Kelly, James A., 1612 N. Seventeenth St.
Kelly, Joseph V., 4257 Main St., Manayunk.
Kelsey, Ernest W., 1217 Spruce St.
Kemp, John H., 2134 South Fifteenth St.
Kempton, Augustus F., 2118 Pine St.
Kennedy, Alexander Ralph, 1335 N. Thirteenth St.
Kennedy, James W., 1409 Spruce St.
Kercher, Delno E., 1927 South Eighteenth St.
Kerkoff, Martha E., 134 North Twentieth St.
Ketcham, Stephen Rush, 1636 Green St.
Kevin, Robert O., 1315 South Fifteenth St.
Kilduffe, Robert, 2510 South Broad St.
King, William H., 6315 McCallum St., Germantown.
Kirby, Ellwood R., 1202 Spruce St.
Kirkbride, M. Frank, 2212 Green St.
Kirkpatrick, Andrew B., 1745 N. Fifteenth St.
Kirschbaum, Helen, 707 Spruce St.
Klaer, Fred H., 247 S. Thirteenth St.
Klapp, Wilbur P., 1716 Spruce St.
Klein, Alexander, 721 Spruce St.
Klopp, Eli L. Oak Lane.
Klopp, Peter P., 618 West Lehigh Ave.
Klemm, Adam, 504 North Fourth St.
Kline, William O., Jr., Cape May, N. J.
Kneass, Samuel S., 1510 Walnut St.
Knight, T. Howard, 4109 Walnut St.
Knipe, J. C., 2035 Chestnut St.
Knorr, John K., Jr., 2235 N. Sixteenth St.
Knowles, Frank C., 332 S. Seventeenth St.
Knowles, George A., 4812 Baltimore Ave.
Kobler, Henry B., Fifty-ninth St. and Girard Ave.
Koerper, Joseph F., Roslyn (Montgomery Co.).
Kohn, Bernard, 1325 North Thirteenth St.
Kollock, Katharine, 1926 Spring Garden St.
Krall, John T., 1921 Chestnut St.
Kraus, Frederick, 930 North Franklin St.
Kremer, Walter H., 6122 Germantown Ave.
Krug, John A., 2437 North Fifth St.
Krusen, Wilmer, 127 North Twentieth St.
Kyle, D. Braden, 1517 Walnut St.
Kynett, Harold H., 614 S. Forty-eighth St.
Laird, J. Packard, Devon (Chester Co.).
Lamparter, Eugene, Green Lane (Montgomery Co.).
Lammer, Francis J., 2266 N. Nineteenth St.
Lampen, Louis Peale, 618 North Fortieth St.
Lancaster, Thomas, 1303 North Broad St.
Landis, Henry R. M., 130 S. Twenty-third St.
Lane, Dudley W., 2237 N. Twenty-ninth St.
Langdon, H. Maxwell, 1728 Chestnut St.
Langrehr, Hiram, 2226 North Broad St.
Laplace, Ernest, 1828 South Rittenhouse Square.
Large, Octavus P., Twenty-ninth St. and Susquehanna Ave.
Latta, Samuel W., 233 South Fourth St.
Lautenbach, Louis J., 1723 Walnut St.
Lavenson, Ralph S., 328 S. Sixteenth St.
Leach, Wilbur W., Eastern Penitentiary, Twenty-first St. and Fairmount Ave.
Leaman, Henry, 832 North Broad St.
Leaman, Rosh, 1818 Girard Ave.
Leamy, LaBarre Jayne, Southeast Corner Thirty-third and Spring Garden Sts.
LeBoutillier, Theodore, 216 S. Twentieth St.
Le Conte, Robert G., 1530 Locust St.
Lee, Walter Estell, Pennsylvania Hospital, Eighth and Spruce Sts.
LeFever, Charles W., 1708 Pine St.
LeGates, Charles A., 1507 Girard Ave.
Leffmann, Henry, 39 S. Tenth St.
Lehman, Frederick C., 2501 Columbia Ave.
Leidy, C. Fontaine-Maury, 316 South Sixteenth St.
Leidy, Joseph, 1319 Locust St.
Leof, Morris V., 495 North Fourth St.
Leonard, Charles Lester, 112 S. Twentieth St.
Leopold, Isaac, 1518 North Franklin St.
Levan, George F., 629 North Fortieth St.
Levi, I. Valentine, 1736 North Sixteenth St.
Levy, David W., 1122 E. Palmer St.
Lewis, Bertha, Malvern (Chester Co.).
Lewis, Morris J., 1316 Locust St.
Liggett, Samuel J., 936 West Somerset St.
Lincoln, Clarence W., Wayne (Delaware Co.).
Lippert, Frieda E., 1831 Chestnut St.
Lippincott, Edmund N., Oak Lane.
Litch, Wilbur F., 1500 Locust St.
Lloyd, J. Hendrie, 3918 Walnut St.
Lockrey, Sarah H., 1520 Vine St.
Loder, Percival E., 517 South Eighth St.
Lodholz, Edward, 3103 Diamond St.
Loeb, Ludwig, 1421 North Fifteenth St.
Loeb, Victor A., 1901 North Eighth St.
Loewenberg, Samuel A., 1620 South Fifth St.
Long, William H., 4657 Lancaster Ave.
Longaker, Daniel, 1402 North Sixteenth St.
Longcope, Warfield T., Penna. Hosp., Eighth and Spruce Sts.
Longenecker, Christian B., 3416 Baring St.
Longenecker, Jerome, 3409 Spring Garden St.
Longstreth, Morris, 1416 Spruce St.
Lopez, Joseph H., 126 North Seventeenth St.
Loughridge, Samuel S., 512 West Lehigh Ave.
Loux, Hiram R., 1614 North Broad St.
Love, Louis F., 1305 Locust St.
Lowenburg, Harry, 2331 North Sixteenth St.
Ludlum, Seymore D., Merion (Montgomery Co.).
Luther, John W., 412 South Fifteenth St.
Lytle, I. Walter, 1530 North Twentieth St.
McAlarney, William M., 1426 Poplar St.
McAniff, Hugh P., 2413 N. Seventh St.
McCamy, Robert H., 1932 E. Cumberland St.
McCarthy, Daniel J., 1329 Spruce St.
McClary, Samuel, 3d., 308 S. Fifty-second St.
McClellan, George, 1116 Spruce St.
McClure, Sorden, 21 South Sixteenth St.
McCollin, S. Mason, 1823 Arch St.
McCombs, Robert S., 2113 Chestnut St.
McConnell, J. W., 638 North Fortieth St.
McCreight, Charles, 2620 North Fifth St.
McCreight, Robert M., 1340 East Montgomery Ave.
McDaniel, Earl L., 1325 Erie Ave.
McDevitt, Charles H., 4537 Wayne Ave.
McDougald, John Q., 1336 Lombard St.
McDowell, Katherine R., 6112 Boynton St.
McDowell, Norris S., 1810 North Sixteenth St.
McDowell, Samuel B., 925 North Broad St.

McFarland, Joseph, 442 West Stafford St.
McGuigan, John I., 6018 Drexel Road.
McIntosh, James W., Southwest Corner Fifty-second and Jefferson Sts.
McKeage, William, 3131 North Broad St.
McKee, James H., 1519 Poplar St.
McKenna, John A., Lansdowne (Delaware Co.).
McKenzie, R. Tait, 121 South Eighteenth St.
McKinley, Archibald L., 3702 North Broad St.
McLean, John D., 1519 Christian St.
McLaughlin, John J., 1532 South Fifth St.
McReynolds, Robert P., 3722 Walnut St.
MacCoy, Alexander W., 216 S. Fifteenth St.
MacCracken, George Y., 612 N. Thirteenth St.
MacFarlane, Catherine, 5227 Germantown Ave.
Macfarland, Frank H., 1921 Chestnut St.
Mackinney, William H., 1809 Chestnut St.
Maier, Frederick H., 1900 Chestnut St.
Makuen, G. Hudson, 1627 Walnut St.
Mallon, Edward A., 1935 N. Seventh St.
Manasses, Jacob L., 3110 Diamond St.
Manges, Willis F., 1223 Spruce St.
Mann, James P., 1234 Spring Garden St.
Marshall, Clara, 258 South Sixteenth St.
Marshall, George M., 1819 Spruce St.
Martin, Collier F., 1831 Chestnut St.
Martin, Edward, 1506 Locust St.
Martin, Joseph, 2009 Columbia Ave.
Martin, William Orlando, 4268 Paul St.
Marvel, Henry V., 4839 Baltimore Ave.
Masland, Harvey C., 2134 N. Nineteenth St.
Massey, G. Betton, 1831 Chestnut St.
Mathews, Franklin, 1720 North Twenty-second St.
Mayo, Florence, 414 West Huntingdon St.
Mays, Thomas J., 1829 Spruce St.
Meigs, Arthur V., 1322 Walnut St.
Megargee, George L., 1810 South Broad St.
Mellersh, Alfred H., Lyceum and Manayunk Aves.
Menger, Edward F., 1225 W. Lehigh Ave.
Metheny, S. A. Sterrett, 617 N. Forty-third St.
Metzler, Gottfried, 949 North Franklin St.
Michener, Evan W., 3722 N. Broad St.
Miller, Albert G., 2150 North Twenty-first St.
Miller, D. J. Milton, 1801 Pine St.
Miller, George B., 634 Diamond St.
Miller, Mary T., 313 North Thirty-third St.
Miller, Morris B., 2117 Pine St.
Milliken, Fred H., 3708 Walnut St.
Mills, Charles K., 1909 Chestnut St.
Mills, H. Brooker, 313 South Thirteenth St.
Minor, J. H., 217 South Forty-first St.
Missett, Joseph V., Southeast Corner Sixty-third and Race Sts.
Mitchell, Charles F., 251 S. Seventeenth St.
Mitchell, John K., 1730 Spruce St.
Mitchell, S. Weir, 1524 Walnut St.
Mitcheson, Robert S. J., 1522 N. Fifteenth St.
Model, Daniel A., 514 North Fourth St.
Mohlmann, Rudolph C., Chester Springs (Chester Co.).
Mongel, Ernest B., 1429 Tioga St.
Montgomery, Charles M., 256 S. Fifteenth St.
Montgomery, Edward E., 1703 Walnut St.
Moore, Cyrus C., 2118 North Hancock St.
Moore, Edward J., 1902 N. Twenty-second St.
Moore, John D., 1505 North Nineteenth St.
Moore, Joseph A., 146 Richmond St.
Moore, Henry D., 1528 Tasker St.
Moore, William D., 6008 Germantown Ave.
Moorhead, William W., 1523 Pine St.
Morgan, Arthur C., 2114 N. Thirty-first St.
Morris, Casper, 2050 Locust St.
Morris, Elliston J., 128 South Eighteenth St.
Morris, Henry, 313 South Sixteenth St.
Morris, J. Cheston, 1514 Spruce St.
Morrison, William H., 8021 Frankford Ave.
Morton, George D., 139 South Fourth St.
Morton, Samuel W., 1933 Chestnut St.
Morton, Thomas S. K., School Lane, West of Wissahickon Ave., Germantown.
Moulton, Albert R., Pennsylvania Hospital Department for the Insane, Forty-ninth and Market Sts.
Moylan, John J., 228 East Price St., Germantown.
Moylan, Peter F., 1005 North Sixth St.
Mudgett, John H., 2028 North Thirteenth St.
Mulrenan, John P., 1228 S. Broad St.
Müller, Andrew J., 1136 North Third St.
Müller, George P., 314 South Fifteenth St.
Müller, Rudolph E., 2031 South Broad St.
Munson, Henry G., 4701 Chester Ave.
Murphy, Francis A., 3008 Richmond St.
Muschlitz, Charles W., 1611 Spruce St.
Musser, John H., 1927 Chestnut St.
Musson, Emma E., 213 South Seventeenth St.
Mutchler, Louis H. 2030 Tioga St.
Myers, Milton K., 2134 North Eighteenth St.
Myers, Tallyrand D., 1521 Spruce St.
Nassau, Charles F., 1831 Chestnut St.
Neff, Joseph S., Cynwyd (Montgomery Co.).
Neilson, Thomas R., 122 S. Seventeenth St.
Newbold, Henry A., 3907 Walnut St.
Newcomet, William S., 3501 Baring St.
Newlin, Arthur, 253 S. Thirteenth St.
Newmayer, Solomon W., 1310 Pine St.
Newton, Robley D., 6137 Vine St.
Nightingale, Harry B., 1614 N. Seventeenth St.
Nicholson, William R., 350 S. Fifteenth St.
Nisbet, Verner, 1432 Pine St.
Noble, Charles P., 1509 Locust St.
Nock, Thomas O., 821 N. Twenty-fourth St.
Norris, George W., 1530 Locust St.
Norris, Richard C., 500 North Twentieth St.
O'Farrell, Gerald D., Jr., 2317 East Cumberland St.
O'Malley, Austin, 2228 S. Broad St.
O'Malley, Joseph, 2228 South Broad St.
O'Relly, Charles A., Strafford (Chester Co.)
O'Neill, Joseph, 1502 S. Tenth St.
O'Hara, Michael, Jr., 2018 Pine St.
Off, Henry J., 323 South Twentieth St.
Oliver, Charles A., 1507 Locust St.
Osmond, Anna R., Philadelphia County Prison, Tenth and Reed Sts.
Osmond, Martha E., 3518 Longshore St.
Ostheimer, Maurice, 225 South Twentieth St.
Ott, Lambert, 831 North Broad St.
Ottinger, Samuel J., Twelfth and Master Sts.
Owen, John J., 411 Pine St.
Packard, Francis R., S. E. Cor. Nineteenth and Pine Sts.
Packard, John H., 517 Chestnut St.
Parker, J. Sparks, 7119 Woodland Ave.
Page, Henry F., 1907 Girard Ave.

Paist, Henry C., 536 North Seventh St.
Pancoast, Henry K., 3211 Baring St.
Pancoast, J. William, 1611 N. Thirteenth St.
Parish, Benjamin D., 29 South Nineteenth St.
Parke, William E., 1739 N. Seventeenth St.
Parrish, Henry, 1422 S. Fifty-ninth St.
Patterson, Francis D., 2103 Locust St.
Patterson, Ross V., Jefferson Hospital.
Pearson, John S., 1507 Christian St.
Peck, Elizabeth L., 4113 Walnut St.
Pemberton, Ralph, 1947 Locust St.
Pennock, Walter J., 1422 N. Seventeenth St.
Penrose, Charles B., 1720 Spruce St.
Pepper, Wilbur L., 3148 Berks St.
Pepper, William, 1811 Spruce St.
Perkins, Francis M., 1428 Pine St.
Peter, Luther C., 1700 Oxford St.
Petty, Orlando H., 303 Roxborough Ave.
Pfahler, George E., 1321 Spruce St.
Pflueger, Henry F., 1412 North Fourth St.
Pfromm, George W., 1434 North Fifteenth St.
Phillips, David Jonathan, 1541 Thompson St.
Phillips, James R., 1515 South Sixth St.
Phillips, Horace, Pennsylvania Hospital for the Insane, Forty-ninth and Market Sts.
Phillips, Richard J., 123 S. Thirty-ninth St.
Picard, Henry L., 1721 North Twenty-fifth St.
Piersol, George A., 4724 Chester Ave.
Pike, Charles P., 7242 Woodland Ave.
Pilkington, Horatio, 4238 Paul St., Frankford.
Pitfield, Robert L., 5211 Wayne Ave., Germantown.
Plass, Charles F. W., Chelton Ave. and Chew St., Germantown.
Pontius, Paul J., 1829 Chestnut St.
Porch, Eli H., 4100 Girard Ave.
Posey, William C., 1835 Chestnut St.
Potsdamer, Joseph B., 1333 N. Franklin St.
Pottberg, Charles, 2338 North Broad St.
Potter, Ellen C., 4837 Germantown Ave.
Potts, Barton H., 109 South Twentieth St.
Potts, Charles S., 1728 Chestnut St.
Poulson, William C. T., 303 S. Sixtieth St.
Prendergast, Michael T., 2435 Columbia Ave.
Price, George E., 1810 Tioga St.
Price, Joseph, 241 North Eighteenth St.
Purnell, Caroline M., 132 S. Eighteenth St.
Pyle, Walter L., 1806 Chestnut St.
Quicksall, William E., 5121 Baltimore Ave.
Radcliffe, McCluney, 711 North Sixteenth St.
Rainear, A. Rusling, 2024 Diamond St.
Ramsey, Robert N., 1124 S. Forty-sixth St.
Randall, B. Alexander, 1717 Locust St.
Randle, William H., 5304 Chew St., Germantown.
Ransley Alexander W., 1509 South Broad St.
Rath, Otto A., 185 Indian Queen Lane, Falls of Schuylkill, Philadelphia.
Raudenbush, James S., 3633 N. Fifteenth St.
Ravenel, Mazyck P., 908 Pine St.
Reber, Wendell, 1212 Spruce St.
Reckefuss, Charles H., Jr., 506 N. Sixth St.
Regar, Horace K., 1909 North Thirteenth St.
Rehfuss, Emil G., 1316 South Broad St.
Remington, Arthur H., 1701 De Lancey St.
Reynolds, Anna M., 1534 Dauphin St.
Reynolds, Charles B., 2003 Diamond St.
Rhein, John H. W., 1732 Pine St.
Rhein, Robert D., 2016 Pine St.
Rhoads, Edward G., 159 West Coulter St., Germantown.
Rhoads, Samuel, 152 School Lane, Germantown.
Rhodes, J. Neely, 1635 South Broad St.
Rich, Edward Y., 1215 W. Lehigh Ave.
Richards, Florence H., 1802 Catharine St.
Ridpath, Robert F., 718 East Chelton Ave., Germantown.
Riegger, Marie, 1225 Poplar St.
Riesman, David, 1624 Spruce St.
Righter, Harvey M., N. E. Cor. Fifty-first and Spruce Sts.
Ring, G. Oram, 1900 Chestnut St.
Risley, J. Norman, 1728 Chestnut St.
Risley, Samuel D., 1728 Chestnut St.
Roberts, John B., 313 South Seventeenth St.
Roberts, Joseph V. C., 108 South Forty-second St.
Roberts, Mercedes A., 1144 S. Eleventh St.
Roberts, Walter, 33 South Nineteenth St.
Roberts, William P., 723 North Eleventh St.
Robertson, J. Frederick, 2465 North Thirty-first St.
Robertson, William E., 320 S. Sixteenth St.
Robinson, Edwin T., 1326 Pine St.
Robinson, George, Jr., 2215 N. Sixteenth St.
Robinson, G. Canby, Pennsylvania Hospital, Eighth and Spruce Sts.
Robinson, William D., 2012 Mt. Vernon St.
Robrecht, John J., 3906 Chestnut St.
Rocap, William A., Olney.
Roderer, John F., 2426 North Sixth St.
Rodman, William L., 1904 Chestnut St.
Roe, William J., 1210 Locust St.
Rosenberger, Randle C., 2330 North Thirteenth St.
Rosenthal, Edwin, 517 Pine St.
Ross, George G., 1721 Spruce St.
Ross, Joseph H., 106 Susquehanna Ave.
Rottner, Charles S., 1500 North Seventh St.
Roussel, Albert E., 2108 Pine St.
Rovno, Philip, 423 Pine St.
Rowand, A. H. C., 3704 Spring Garden St.
Royce, Charles C., Wayne (Delaware Co.).
Royer, B. Franklin, Municipal Hospital, Twenty-second St. and Lehigh Ave.
Ruff, William F., 742 N. Fortieth St.
Ruffell, Charles E., 244 East Girard Ave.
Rugh, J. Torrence, 1616 Spruce St.
Runkle, Stuart C., 1605 Christian St.
Rupert, Mary P. S., 2127 Green St.
Sailer, Joseph, 248 South Twenty-first St.
Sajous, Charles E. de M., 2043 Walnut St.
Salade, Lewis A., 4000 Spruce St.
Salinger, Julius L., 628 Spruce St.
Santee, Eugene L., 532 North Sixth St.
Sargent, A. Alonzo, 939 Spruce St.
Sartain, Paul J., 212 West Logan Square.
Saunders, Robert Ritchie, 926 N. Fifteenth St.
Sautter, Albert C., 1421 Locust St.
Saxman, Nathaniel H., 2739 Kensington Ave.
Saylor, Edwin S., 2005 Chestnut St.
Scarlett, Rufus B., 4005 Chestnut St.
Schamberg, Jay F., 1922 Spruce St.
Schell, J. Thompson, 2505 N. Seventeenth St.
Schneideman, Theodore B., 1831 Chestnut St.
Schisler, Belle A., 2835 Diamond St.
Schock, Harvey E., 1311 S. Fifteenth St.
Schweinitz, George E. de, 1705 Walnut St.

Schoales, Charles B., 1428 North Eleventh St.
Scholl, B. Frank, 1711 North Twenty-fifth St.
Schumann, Edward A., 15 Pelham Road, Germantown.
Scott, J. Alison, 1834 Pine St.
Schwenk, Peter N. K., 810 North Seventh St.
Scull, William B., 3024 Richmond St.
Seabrook, Alice M., Twenty-second St. and North College Ave.
Seifert, F. Robert, 2174 E. Cumberland St.
Seiss, Ralph W., 255 South Seventeenth St.
Seltzer, Charles M., 2001 Green St.
Service, Charles A., City Ave., Bala (Montgomery Co.).
Shammo, George C., 260 N. Fifty-second St.
Shannon, Charles E. G., 1528 Walnut St.
Sharpe, Albert H., 5212 Morris St., Germantown.
Shea, William Kerr, 1705 N. Eighteenth St.
Shellenberger, Jacob R., 5505 Germantown Ave.
Shelmerdine, E. Kirkland, 6135 Germantown Ave.
Shields, William G., 412 School Lane, Germantown.
Shober, John B., 1731 Pine St.
Shoemaker, George E., 1831 Chestnut St.
Shoemaker, Harlan, 1618 Spruce St.
Shoemaker, John V., 1519 Walnut St.
Shoemaker, William T., 2031 Chestnut St.
Sholler, George W., 1224 W. Lehigh Ave.
Shumway, Edward A., 2007 Chestnut St.
Shurtleff, Henry C., 34 South Fortieth St.
Shute, Harry A., 1422 Master St.
Simcox, Lawrence, 5201 Ridge Ave.
Simsohn, Joseph S., 909 North Franklin St.
Sinclair, John F., 4103 Walnut St.
Sinexon, Justus, 114 South Eighteenth St.
Singer, Benjamin L., 1914 N. Eighteenth St.
Sinkler, Francis W., 220 South Sixteenth St.
Sinkler, Wharton, 1606 Walnut St.
Siter, E. Hollingsworth, 2038 Locust St.
Skidelsky, Rachel S., 824 North Twenty-fourth St.
Skillern, Penn G., 241 South Thirteenth St.
Skillern, Ross Hall, South East Cor. Thirty-fourth and Race Sts.
Skillern, Samuel R., 3509 Baring St.
Skilling, Michael J., 1635 Christian St.
Slaughter, Charles H., 1332 South Tenth St.
Slocum, Harris A., 1900 Chestnut St.
Small, John Hamilton, 914 South Forty-eighth St.
Small, William B., 2232 Green St.
Smiley, Annie E., 5203 Haverford Ave.
Smith, Alexis D., 6019 Germantown Ave.
Smith, Allen J., 1005 S. Forty-sixth St.
Smith, Caroline E., Perry Bldg., Sixteenth and Chestnut Sts.
Smith, David D., 5214 Wayne Ave.
Smith, H. Boydston, 5939 Haverford Ave.
Smith, Joseph L., 2314 North Sixteenth St.
Smith, S. MacCuen, 1429 Spruce St.
Smock, Ledru P., 3330 Chestnut St.
Snively, A. F., 5308 Market St.
Snively, I. Newton, 1617 North Broad St.
Snively, R. Dunglison, 1707 Tioga St.
Somers, Lewis S., 3554 North Broad St.
Spangler, Ralph H., 2034 S. Thirteenth St.
Speese, John, 328 S. Sixteenth St.
Spellissy, Joseph M., 110 S. Eighteenth St.
Spencer, George W., 1838 Christian St.
Spiegle, Grace E., 2115 North Twelfth St.
Spiller, William G., 4409 Pine St.
Sprissler, Theodore, 1151 South Broad St.
Stafford, Alvah M., 6402 Woodland Ave.
Stahl, B. Franklin, 1727 Pine St.
Stalberg, Samuel, 1331 South Sixth St.
Staller, Max, 631 Catharine St.
Stanton, William B., 732 Pine St.
Starkey, Frank R., 445 S. Forty-fourth St.
Stauffer, Nathan P., 4833 Baltimore Ave.
Stelwagon, Henry W., 1634 Spruce St.
Stengel, Alfred, 1811 Spruce St.
Steinbach, Lewis W., 1309 North Broad St.
Stern, Max J., 711 North Franklin St.
Steel, William A., 2528 North Fifth St.
Steele, J. Dutton, Northeast Corner Fortieth and Locust Sts.
Steinwandel, John A., 2829 Oxford St.
Stellwagon, Thomas C., Jr., 1121 Spruce St.
Stevens, Arthur A., 314 South Sixteenth St.
Stewart, Alonzo H., 250 North Twelfth St.
Stewart, Francis T., 311 South Twelfth St.
Stewart, John, 2334 North Twenty-ninth St.
Stewart, Thomas S., S. E. Cor. Eighteenth and Spruce Sts.
Stiles, Charles N., 1831 Chestnut St.
Stiles, Francis A., 3801 Powelton Ave.
Stillwell, Walter C., 1248 S. Broad St.
Stone, Edward R., 1701 Master St.
Stout, Emmanuel J., 1538 N. Fifteenth St.
Stout, George C., 1611 Walnut St.
Stout, Philip Samuel, 3356 N. Fifteenth St.
Stover, I. Francis, 33 Carpenter St., Germantown.
Strawbridge, George, 202 South Fifteenth St.
Strawbridge, I. Rendall, 3411 Race St.
Strecker, Henry A., 327 South Twelfth St.
Strittmatter, Isador P., 999 North Sixth St.
Strobel, John, 948 North Fifth St.
Strouse, Frederick M., 2220 North Broad St.
Stryker, Samuel S., Northeast Corner Thirty-ninth and Walnut Sts.
Sutliff, Fred A., 4419 Germantown Ave.
Sutliff, VanDyne A., 103 N. Fifty-second St.
Sutton, Howard A., 320 S. Sixteenth St.
Swan, John M., 3713 Walnut St.
Swayne, Eugene, 658 N. Fifteenth St.
Sweet, William M., 1205 Spruce St.
Swindells, Walton C., 1835 Chestnut St.
Tait, Thomas W., 320 S. Fifteenth St.
Talley, James E., 1927 Chestnut St.
Tappan, Lucy N., 123 South Sixteenth St.
Targette, Walter S., 5715 Girard Ave.
Taylor, Charles F., 1520 Chestnut St.
Taylor, James Gurney, 6041 Drexel Road.
Taylor, John J., 4105 Walnut St.
Taylor, J. Madison, 1504 Pine St.
Taylor, William J., 1825 Pine St.
Taylor, William L., 1340 North Twelfth St.
Teller, William H., 1713 Green St.
Thomas, Charles H., 3634 Chestnut St.
Thomas, Eb. W., 1833 Chestnut St.
Thomas Frank W., 27 Mt. Airy Ave.
Thomas, George P., 2113 North Seventh St.
Thomas, T. Turner, 1636 Francis St.
Thomas, W. Hersey, 1421 N. Seventeenth St.
Thomson, Arch G., 1426 Walnut St.
Thomson, William, 1426 Walnut St.

Thorington, James, 120 South Eighteenth St.
Thornton, E. Quin, 922 Spruce St.
Thrush, M. Clayton, 3705 Spring Garden St.
Tomlin, Almer N., 424 North Fortieth St.
Tomlinson, William H., 4931 Germantown Ave.
Town, Edwin C., Broad St. Station.
Tracy, Stephen E., 1429 Spruce St.
Trexler, Henrietta M. Dougherty, 923 West Susquehanna Ave.
Tucker, Henry, 119 South Twentieth St.
Tulley, Edgar W., 2400 North Broad St.
Tunis, Joseph P., 1426 Pine St.
Turnbull, Charles S., 1935 Chestnut St.
Turner, Annie L., 4817 Baltimore Ave.
Turner, John B., 1525 Christian St.
Twaddell, Thomas P. H., 4203 Chester Ave.
Tyler, George Trotter, 2226 Locust St.
Tyson, James, 1506 Spruce St.
Tyson, T. Mellor, 1506 Spruce St.
Uhle, Alexander A., 1327 Jefferson St.
Ullom, Josephus T., 24 Carpenter St., Germantown.
Ulman, Joseph F., 2629 N. Twenty-ninth St.
Umsted, William M., 2812 Oxford St.
Vanderslice, Edward S., 127 South Fifth St.
Vandervoort, Chas. A., 3311 North Broad St.
VanGasken, Frances C., 115 South Twenty-second St.
Van Harlingen, Arthur, 1831 Chestnut St.
VanKorb, William, 515 North Fifty-sixth St.
Van Pelt, William T., 1528 Spruce St.
Vansant, Eugene L., 1929 Chestnut St.
Veasey, Clarence A., 1833 Chestnut St.
Von Cotzhausen, Louis, 838 N. Twenty-fourth St.
Wadsworth, William S., Thirty-sixth and Chestnut Sts., "The Normandie."
Walk, James W., 737 Corinthian Ave.
Walker, James B., 1617 Green St.
Walker, John K., 1632 Spruce St.
Walker, Samuel E., 851 North Broad St.
Walker, Warren, 1632 Spruce St.
Wallis, J. Edward, 2642 Richmond St.
Wallis, J. Frank, 711 DeKalb St., Norristown (Montgomery Co.).
Walsh, Edward F., 111 East Lehigh Ave.
Walsh, Joseph P., 732 Pine St.
Walters, B. Frank, Jr., 1716 Chestnut St.
Walton, Josephine Z., 911 North Fifteenth St.
Wanamaker, John, 3d, 1511 Mt. Vernon St.
Ward, E. Tilson, 1415 South Broad St.
Ward, Nathan G., 1807 Chestnut St.
Warder, Charles B., 1633 Spruce St.
Warlow, Margaret A., 1718 S. Eighteenth St.
Warmuth, Mitchell P., 863 N. Twentieth St.
Watson, Arthur W., 126 S. Eighteenth St.
Watson, Edward W., S. Nineteenth St.
Watson, Walter W., Broad Street Station.
Watson, W. Newbold, 636 South Forty-eighth St.
Watt, Robert, 2822 Frankford Ave.
Weber, Harry F., 4440 Germantown Ave.
Weaver, Albert P., 879 Belmont Ave.
Weider, Henry S., 2131 North Fifteenth St.
Weintraub, Sarah L., 400 South Ninth St.
Weisenburg, Theodore H., 2030 Chestnut St.
Welch, William M., 1411 Jefferson St.
Wells, P. Frailey, Southwest Corner Fortieth and Brown Sts.
Wells, William H., 1105 Spruce St.
Welty, Emil M., 924 W. Lehigh Ave.
Wentz, B. Frank, 6602 Woodland Ave.
Wenner, Ellis Bruce, 3805 Baring St.
Wenzel, Mary, 314 North Sixth St.
West, John W., 1125 Wallace St.
Westcott, Thompson S., 1833 Spruce St.
Wetherill, H. Emerson, 3734 Walnut St.
Weyant, Harry W., 911 North Fourth St.
Wharton, Henry R., 1725 Spruce St.
Wheeler, Edwin B., 1919 North Eighth St.
Whetstone, William B., 4630 Chester Ave.
White, Courtland Y., 334 South Sixteenth St
White, Francis, 1852 N. Thirteenth St.
White, J. William, 1810 S. Rittenhouse Sq.
Whiteway, Harold M., 1924 Chestnut St.
Whiting, Albert D., 1523 Spruce St.
Widmyer, J. Lawrence, 2033 Spring Garden St.
Wiggins, Edward H., 4415 North Uber St.
Whitman, John G., 2030 Wallace St.
Wiley, Eugene, 1440 South Broad St.
Wiley, Harry E., 1440 South Broad St.
Wilkins, John W., 1914 Arch St.
Willard, DeForest, 1901 Chestnut St.
Williams, Charles B., Pennsylvania Hospital for the Insane, Forty-fourth and Market Sts.
Williams, Rachell R., Penna. Bldg. Fifteenth and Chestnut Sts.
Williamson, James, 3401 North Twentieth St.
Willits, I. Pearson, 33 W. Walnut Lane, Germantown.
Willson, Robert N., 1712 Locust St.
Wilson, H. Augustus, 1611 Spruce St.
Wilson, James C., 1509 Walnut St.
Wilson, John D., 1820 Green St.
Wilson, Samuel M., 1517 Arch St.
Wilson, W. Reynolds, 1709 Spruce St.
Wingate, Otis L., 2328 Parrish St.
Winsor, Henry, Ardmore (Montgomery Co.).
Winter, S. Elizabeth, Inwood, W. Conshohocken (Montgomery Co.).
Wister, James W., 5430 Germantown Ave.
Witmer, Evelyn, 42 East Fishers Lane, Germantown.
Wolfe, Samuel, 1701 Diamond St.
Wood, Alfred C., 128 South Seventeenth St.
Wood, George B., 129 South Eighteenth St.
Wood, Harold B., 5038 Pine St.
Wood, Horatio C., Jr., 1925 Chestnut St.
Wood, Walter A., 1715 Spruce St.
Woodbury, Frank, 218 South Sixteenth St.
Woods, D. Flavel, 1501 Spruce St.
Woods, Matthew, 1307 South Broad St.
Woods, Richard F., 1501 Spruce St.
Woodward, George, Room 709 North American Building.
Wray, William S., 114 South Eighteenth St.
Wrigley, Arthur, 612 S. Eleventh St.
Yard, John L., 327 South Eighteenth St.
Yeager, Frank N., 2826 Oxford St.
Young, James K., 222 South Sixteenth St.
Zentmayer, William, 1819 Spruce St.
Ziegler, S. Lewis, 1625 Walnut St.
Ziegler, Walter M. L., 1418 N. Seventeenth St.
Ziegler, William H., 3028 Frankford Ave.
Zimlick, Arthur J., 702 Chelton Ave.
Zimmerman, Mason W., 1522 Locust St.

POTTER COUNTY SOCIETY.

(Organized April 5, 1898.)

President..John B. Colcord, Port Allegany.
V. Pres....Fordyce C. Gorham, Coudersport.
Robert B. Knight, Coudersport.
Secretary..Elwin H. Ashcraft, Coudersport.
Treasurer..Fordyce C. Gorham, Coudersport.
Reporter...Elwin H. Ashcraft, Coudersport.
Censors....James T. Hurd, Galeton.
Elwin H. Ashcraft, Coudersport.
Robert B. Knight, Coudersport.
F. Gurney Reese, Coudersport.
William H. Cassel, Coudersport.
Com. on Pub. Policy and Legislation.Edelbert U. Eaton, Ulysses.
James T. Hurd, Galeton.

Stated meetings second Tuesday in January, April, July and October, at Court House, Coudersport. Annual meeting in January.

MEMBERS (20).

Ashcraft, Elwin H., Coudersport.
Bently, J. Irving, Galeton.
Brown, Barton E., Galeton.
Church, Nathan W., Ulysses.
Colcord, Joseph B., Port Allegany (McKean Co.).
Eaton, Edelbert U., Ulysses.
Gorham, Fordyce C., Coudersport.
Hart, Henry D., Genesee.
Horn, Elmer E., Austin.
Howe, William, Shingle House.
Hurd, James T., Galeton.
Jacobs, David E., Oswayo.
Knight, Robert B., Coudersport.
McGranor, William J., Port Allegany (McKean Co.).
Page, John H., Austin.
Potter, Wolsey B., Austin.
Reese, F. Gurney, Coudersport.
Squires, Walter H., Roulette.
Steele, John G., Galeton.
Tassell, William H., Coudersport.

SCHUYLKILL COUNTY SOCIETY.

(Organized 1845.)

President..George H. Moore, Schuylkill Haven.
V. Pres....Arthur B. Fleming, Tamaqua.
Secretary..George O. O. Santee, Cressona.
Treasurer..David Taggart, Frackville.
Reporter...George O. O. Santee, Cressona.
Censors....Christian Lenker, Schuylkill Haven.
J. Spencer Callen, Shenandoah.
Phaon Hermany, Mahanoy City.
George H. Halberstadt, Pottsville.
Albert F. Bronson, Girardville.
Com. on Pub. Policy and Legislation.William T. Williams, Mt. Carmel.
David Taggart, Frackville.
George W. Ressler, Ashland.
George H. Moore, Schuylkill Haven.
George O. O. Santee, Cressona.

Stated meetings in Pottsville (or elsewhere as may be selected) the first Tuesday of each month. Election of officers in January.

MEMBERS (60).

Bartho, Benjamin F., Mt. Carmel (Northumberland Co.).
Berk, John K., Frackville.
Biddle, Jonathan C., Ashland.
Birch, Thomas J., Port Carbon.
Binkley, George K., Orwigsburg.
Bowman, Henry C., Mahanoy City.
Brady, Sobieski H., Lost Creek.
Bronson, Albert F., Girardville.
Bryson, J. F. Girardville.
Callen, J. Spencer, Shenandoah.
Carr, Andrew P., Shickshinny (Luzerne Co.).
Carr, William H., Lancaster (Lancaster Co.).
Clever, Kimber R., Friedensburg.
Coble, Jacob W., Tamaqua.
Corson, G. R. S., Pottsville.
Dechert, Harry W., Orwigsburg.
Farquhar, George W., Pottsville.
Fleming, Arthur B., Tamaqua.
Freudenberger, Katrina, Tamaqua.
Gwinner, John M., Centralia (Columbia Co.).
Gillars, Alexander L., Pottsville.
Gulden, Benjamin C., Minersville.
Halberstadt, A. Howell, Pottsville.
Halberstalt, George H., Pottsville.
Hermany, Phaon H., Mahanoy City.
Hoffman, J. Louis, Ashland.
Holland, David B., Mahanoy City.
Kennedy, Louis T., Pottsville.
Langton, Daniel J., Shenandoah.
Lenker, Christian, Schuylkill Haven.
Lessig, James Alfred, Schuylkill Haven.
Little, George, Tamaqua.
Matten, William H., McKeansburg.
Miller, Charles D., Pottsville.
Monaghan, William J., Girardville.
Montellius, Ralph W., Mt. Carmel (Nortumberland Co.).
Moore, George H., Schuylkill Haven.
Morris, Joseph P., St. Clair.
O'Hara, Patrick H., Pottsville.
Pollack, B. S., 241 Grove St., Jersey City, N. J.
Ressler, George W., Ashland.
Rentschler, Henry D., Ringtown.
Riley, John D., Mahanoy City.
Robbins, Clifton, Shenandoah.
Roberts, J. Pierce, Shenandoah.
Robinhold, Lewis C., Auburn.
Rogers, Jerome B., Pottsville.
Roth, Victor T., Pottsville.
Santee, George O. O., Cressona.
Schultz, J. William, Tremont.
Seibert, Albert A., Pottsville.
Shifferstein, Edgar E., Tamaqua.
Spalding, Stephen C., Shenandoah.
Stein, Newton Henry, Middleport.
Stein, William N., Shenandoah.
Swaving, J. Henry, Pottsville.
Taggart, David, Frackville.
Wasley, Harry M., Shenandoah.
Williams, William T., Mt. Carmel (Northumberland Co.).
Winters, William Joseph, Shenandoah.

SNYDER COUNTY SOCIETY.

(Organized May 18, 1905.)

President..Benjamin F. Beale, McKees Half Falls.

V. Pres.... William W. Longacre, Mt. Pleasant Mills.
Charles G. Smith, Beaver Springs.
Secretary.. A. Jerome Hermann, Middleburg.
Treasurer.. Frank J. Wagenseller, Selins Grove.
Reporter... A. Jerome Hermann, Middleburg.
Censors.... Allen A. Yoder, Selins Grove.
Henry M. Nipple, Selins Grove.
John O. Wagner, Beaver Springs.
Marand Rothrock, Mt. Pleasant Mills.
James W. Mitchell, McClure.
Com. on Pub. Policy and Legislation. Edward M. Miller, Beavertown.
Albert M. Smith, Beaver Springs.
Percival Herman, Kratzerville.

Annual meeting in January. Stated meetings the second Friday of January, March, May, July, September and November, at Middleburg or elsewhere as ordered by vote of the society.

MEMBERS (22).

Beale, Benjamin F., 207 High St., Duncannon (Perry Co.).
Bordner, William Henry H., Shamokin Dam.
Hassinger, George Edgar, Middleburg.
Hermann, A. Jerome, Middleburg.
Herman, Percival, Kratzerville.
Kanawel, John F., Penns Creek.
Longacre, William W., Mt. Pleasant Mills.
Miller, Edward M., Beavertown.
Mitchell, James W., McClure.
Nipple, Henry M., Selins Grove.
Rothrock, Marand, Mt. Pleasant Mills.
Sampsell, J. W., Penns Creek.
Shive, H. E., Bannerville.
Shive, Simon D., McClure.
Smith, Albert M., Beaver Springs.
Smith, Charles G., Beaver Springs.
Strohecker, J. F., Beavertown.
Tool, Edward W., Freeburg.
Wagenseller, B. Frank, Selins Grove.
Wagenseller, Frank J., Selins Grove.
Wagner, John O., Beaver Springs.
Yoder, Allen A., Selins Grove.

SOMERSET COUNTY SOCIETY.

(Organized October 29, 1889.)

President.. Charles P. Large, Meyersdale.
V. Pres.... Richard T. Pollard, Garrett.
Secretary.. H. Clay McKinley, Meyersdale.
Fin. Sec... Bruce Lichty, Meyersdale.
Treasurer.. Walter S. Mountain, Confluence.
Reporter... H. Clay McKinley, Meyersdale.
Censors.... Maurice Stayer, Rockwood.
Harry C. Hoffman, Meyersdale.
Albert M. Lichty, Elk Lick.
Com. on Pub. Policy and Legislation. H. Clay McKinley, Meyersdale.
Bruce Lichty, Meyersdale.
William T. Rowe, Meyersdale.

Stated meetings at place selected on the third Tuesday of January, April, July, and October. Election of officers in October and offices assumed at January meeting.

MEMBERS (25).

Baker, Marcellus H., Stoystown.
Critchfield, John B., Ralphton.
Evans, John, 602 Cator Ave., Baltimore, Md.
Gardner, John H., Stoystown.
Garey, Henry, Berlin.
Hemminger, Ross J., Meyersdale.
Hickeman, Walter E., Confluence.
Hoffman, Harry C., Meyersdale.
Kuhlman, Winfield S., Ursina.
Large, Charles P., Meyersdale.
Lichty, Albert M., Elk Lick.
Lichty, Bruce, Meyersdale.
Louther, Snyder J. H., Somerset.
McKinley, Henry Clay, Meyersdale.
Marsden, Henry Irving, Somerset.
Masters, George B., Rockwood.
Myers, William H., Meyersdale.
Moore, Harmar D., New Lexington.
Moore, William H., Garrett.
Mountain, Walter S., Confluence.
Pollard, Richard T., Garrett.
Rowe, William T., Meyersdale.
Shaw, William P., Berlin.
Stayer, Maurice, Rockwood.
Wilson, Henry, Somerset.

SUSQUEHANNA COUNTY SOCIETY.

(Organized November 19, 1838.)

President.. Clayton Washburn, Susquehanna.
V. Pres.... William B. Beaumont, West Auburn.
Secretary.. Edward R. Gardner, Montrose.
Treasurer.. John G. Wilson, Montrose.
Reporter... Calvin C. Halsey, Montrose.
Censors.... John G. Wilson, Montrose.
Irving R. Schoonmaker, Hallstead.
Dever J. Peck, Susquehanna.
Com. on Pub. Policy and Legislation. Frederick A. Goodwin, Susquehanna.
Irving R. Schoonmaker, Hallstead.
John G. Wilson, Montrose.

Annual meeting in Montrose on the first Tuesday of May. Other meetings first Tuesday of August, October and February at places designated at previous meetings.

MEMBERS (33).

Ainey, Albert J., Brooklyn.
Ainey, David C., New Milford.
Beaumont, William B., West Auburn.
Birdsall, Samuel, Susquehanna.
Brundage, Albert T., Harford.
Caterson, Clarington W., Franklin Forks.
Condon, William J., Susquehanna.
Downton, Ernest W., Starrucca (Wayne Co.).
Fitch, Alpheus B., Factoryville (Wyoming Co.).
Fry, Harvey M., Rush.
Gardner, Edward R., Montrose.
Goodwin, Frederick A., Susquehanna.
Grander, Frederick L., Forest City.
Hager, Albert E., Clifford.
Halsey, Calvin C., Montrose.
Harrison, George M., Meshoppen (Wyoming Co.).
Haverly, Irving D., South Gibson.

Hickok, Asa Lee, Rush.
Hines, Eben P., Great Bend.
Hooven, H. Hewitt, Harford.
Johnston, Charles A., Harford.
Lathrop, Homer B., Springville.
Lockwood, Charles E., Hallstead.
Miller, Morgan L., Susquehanna.
Peck, Dever J., Susquehanna.
Richardson, William L., Montrose.
Rivenburg, Sidney W., Clifford.
Schoonmaker, Irving R., Hallstead.
Snyder, Abram E., New Milford.
Taylor, Arthur J., Hopbottom.
Vanness, Clarence N., Hallstead.
Washburn, Clayton, Susquehanna.
Wilson, John G., Montrose.

TIOGA COUNTY SOCIETY.

(Organized 1861. Reorganized January 24, 1896.)

President..Farnum S. Shaw, Wellsboro.
V. Pres....Arthur M. Greenfield, Gaines.
Secretary..Arland L. Darling, Lawrenceville.
Treasurer..Solomon P. Hakes, Tioga.
Censors....Ross H. Jones, Little Marsh.
Clarence W. Webb, Wellsboro.
Charles W. Sheldon, Keeneyville.
Com. on Pub. Policy and Legislation. Henry E. Caldwell, Blossburg.
Ross H. Jones, Little Marsh.
Charles W. Sheldon, Keeneyville.
Farnum S. Shaw, Wellsboro.

Stated meetings in Lawrenceville, the third Friday in June, September, December and March. Election of officers in June.

MEMBERS (30).

Bacon, Morgan L., Wellsboro.
Caldwell, Henry E., Blossburg.
Clark, Edwin E., Knoxville.
Crandall, George D., Blossburg.
Darling, Arland L., Lawrenceville.
Darling, Lewis J., Lawrenceville.
Ditchburn, D. T., Arnot.
Flower, Edith I., Mansfield
Gaskill, Samuel A., Covington.
Gentry, Clarence C., Antrim.
Gentry, John M., Stony Forks.
Glover, Allen H., Knoxville.
Greenfield, Arthur M., Gaines.
Hakes, Solomon P., Tioga.
Heinan, Gustaf F., Blossburg.
Howland, Harry W., Gaines.
Jones, Ross H., Little Marsh.
Kunkle, Asaph T., Westfield.
Mastin, Nathan W., Wellsboro.
Nye, Orrin S., Rutland.
Patterson, David A., Westfield.
Pritchard, Mahlon R., Westfield.
Shaw, Farnum S., Wellsboro.
Sheldon, Charles W., Keeneyville.
Smith, Charles R., Tioga.
Smith, Robert B., Tioga.
Vedder, Wentworth D., Expedit (Cambria Co.).
Ward, Ernest L., Osceola.
Waters, David C., Arnot.
Webb, Clarence W., Wellsboro.

UNION COUNTY SOCIETY.

(Organized July 27, 1904.)

President..James Kleckner, Mifflinburg.
V. Pres....William Leiser, Jr., Lewisburg.
Secretary..Charles A. Gundy, Lewisburg.
Treasurer..Charles A. Gundy, Lewisburg.
Reporter...Oliver W. H. Glover, Laurelton.
Censors....Charles Dimm, Mifflinburg.
Thomas C. Thornton, Lewisburg.
Amos V. Persing, Allenwood (Lycoming Co.).
Com. on Pub. Policy and Legislation. William Leiser, Jr., Lewisburg.
Amos V. Persing, Allenwood.
J. Charlton Steans, Mifflinburg.

Stated meetings in either Bucknell Hall or Bucknell Laboratory, Lewisburg, the third Thursday of April, July, October and December. Election of officers in December

MEMBERS (18).

Brubaker, Frank B., Mifflinburg.
Dimm, Charles H., Mifflinburg.
Fetterolf, Isaac A., Mazeppa.
Glover, Oliver W. H., Laurelton.
Gerhart, Weber L., Lewisburg.
Gimmel, John, Millville (Columbia Co.).
Groff, George G., Lewisburg.
Gundy, Charles A., Lewisburg.
Katherman, Frank C., Blairsville.
Kleckner, James, Mifflinburg.
Leiser, William, Jr., Lewisburg.
Metzger, William E., Alvira.
Persing, Amos V., Allenwood (Lycoming Co.).
Sampsell, D. M., Winfield.
Steans, J. Charlton, Mifflinburg.
Steans, Ralph, Zellwood, Florida.
Thornton, Thomas C., Lewisburg.
Wilson, Harry M., New Berlin.

VENANGO COUNTY SOCIETY.

(Organized May 8, 1867.)

President..Harry S. Stone, Franklin.
V. Pres....Frederick W. Brown, Franklin.
Secretary..Edwin W. Moore, Franklin.
Treasurer..John C. Wilkins, Oil City.
Censors....Clarence W. Coulter, 1 year, Oil City.
John B. Glenn, 2 years, Franklin.
William A. Nicholson, 3 years, Franklin.
Com. on Pub. Policy and Legislation. W. G. Morrow, West Hickory.
Frederick W. Brown, Franklin.
John C. O'Day, Oil City.
William A. Nicholson, Franklin.

Stated meetings on the third Tuesday of January, March, May, July, September, and November; the regular meetings at Oil City and Franklin. Two meetings each year are "outings" and are held at Monarch Park and the State Institution for Feeble Minded. Election of officers in January.

MEMBERS (42).

Blair, James D., Franklin.
Bovard, Forest J., Tionesta (Forest Co.).
Bridenbaugh, Charles S., Emlenton.
Brown, Alexander M., Franklin.

Brown, Charles H., Franklin.
Brown, Fredrick W., Franklin.
Coulter, Clarence W., Oil City.
Crawford, John K., Cooperstown.
Davis, John F., Oil City.
Detar, Carm Y., Kellettsville (Forest Co.).
Dunn, Rose M., Franklin.
Forster, William, Oil City.
Gilmore, William G., Emlenton.
Glenn, John B., Frankin.
Hammond, Harry P., Franklin.
Jobson, George B., Jr., Franklin.
Johnston, William C., Titusville (Crawford Co.).
Kerr, Clinton S., Emlenton.
Kirschner, Harry E., Oil City.
Lemmer, J. Conrad, Oil City.
McCarthy, Frank P., Oil City.
McDowell, Harry F., Franklin.
Magee, George W., Oil City.
Moore, Edwin W., Franklin.
Morrow, William G., West Hickory (Forest Co.).
Murdoch, J. Moorehead, Polk.
Nicholson, William Addison, Franklin.
O'Day, John C., Oil City.
Rhea, Edwin W., Oil City.
Ricketts, Audley J., Dempseytown.
Siggins, James B., Oil City.
Shoemaker, John A., Knox (Clarion Co.).
Spencer, Elwood P., Cooperstown.
Stone, Harry S., Franklin.
Strayer, Jacob P., Oil City.
Taylor, John E., Rockland.
Thompson, Edgar V., Franklin.
Thompson, James C., Franklin.
Van Naten, Bert L., Franklin.
Waid, John M., Titusville (Crawford Co.).
Wilkins, John C., Oil City.
Wilson, Calvin M., Franklin.

WARREN COUNTY SOCIETY.

(Organized 1871. Reorganized September 19, 1881.)

President. . Michael V. Ball, Warren.
V. Pres. . . . Charles C. Kemble, Tidioute.
Ernest J. Cowden, North Warren.
Secretary. . Mary C. Conant, Warren.
Treasurer. . Morris S. Guth, Warren.
Reporter. . . Mary C. Conant, Warren.
Censors. . . . Michael V. Ball, Warren.
Otis S. Brown, Warren.
William M. Robertson, Warren.
Com. on Pub. Policy and Legislation. Michael V. Ball, Warren.
James R. Durham, Warren.
Christian J. Frantz, Warren.
William M. Robertson, Warren.

Stated meetings at State Hospital for the Insane, North Warren, first Tuesday after second Monday of each month. Election of officers in January.

MEMBERS (40).

Baker, Willis M., Warren.
Ball, Michael V., Warren.
Bennett, George Everett, Columbus.
Bradshaw, George M. B., Sugar Grove.
Brown, Otis S., Warren.
Cadwallader, Seth Iredell, Enola (Cumberland Co.).
Chapman, Leroy E., Warren.
Christie, Milton H., Corry (Erie Co.).
Conant, Mary C., State Hospital, Warren.
Cowden, Ernest J., North Warren.
Cowles, Horace H., Lander.
Durham, James R., Warren.
Flatt, Anna H. S., Corydon.
Flatt, Clayton C., Corydon.
Frantz, Christian J., Warren.
Gass, James, Sheffield.
Guth, Morris S., State Hospital, Warren.
Haines, Franklin G., Warren.
Hamilton, John W., Warren.
Hay, William H., Youngsville.
Hyer, Irving G., Clarendon.
Kelley, Ernest J., Chandlers Valley.
Kemble, Charles, Tidioute.
Kemble, Charles C., Tidioute.
Kibler, Charles B., Corry (Erie Co.).
Knapp, Joseph J., Youngsville.
McKee, Edwin D., Sugar Grove.
Noeson, Frank T., Bear Lake.
O'Donnell, John J., Sheffield.
Pryor, George T., Sheffield.
Robertson, William M., Warren.
Russell, Hiram B., Sheffield.
Russell, John C., Warren.
Schmehl, Charles W., Warren.
Shellenberger, Edward, State Hospital, Warren.
Shortt, William H., Youngsville.
Smith, Monroe T., Warren.
Stewart, Richard B., Warren.
Van Giesen, T. Lee, Sugar Grove.
VerMilyea, Charles H., Russell.

WASHINGTON COUNTY SOCIETY.

(Organized May 19, 1855.)

President. . William H. Alexander, Canonsburg.
V. Pres. . . . William W. Weygrandt, Thomas.
Secretary. . John B. Donaldson, Canonsburg.
Treasurer. . Albert E. Thompson, Washington.
Reporter. . . John B. Donaldson, Canonsburg.
Censors. . . . William D. Teagarden, Washington.
James W. McKennan, Washington.
Joseph W. Hunter, Charleroi.
Com. on Pub. Policy and Legislation. John B. Donaldson, Canonsburg.
Charles B. Wood, Monongahela.
J. Frank Donahoo, Washington.
Committee on Increase of Membership. . . . . . Edgar M. Hazlett, Washington.
Charles B. Wood, Monongahela.
Robert E. Conner, Hickory.
Fred C. Stahlman, Charleroi.
John C. Kelso, Canonsburg.
John N. Sprowls, Claysville.
Frank I. Patterson, Scenery Hill.
Minor H. Day, Donora.
William V. Riddle, Burgettstown.
William A. LaRoss, McDonald.

Stated meetings in room of County Superintendent of Public Schools in Court House, Washington, second Tuesday of January, March, May, July, September, and November. Election of officers in November.

MEMBERS (105).

Acheson, Harry M., Washington.
Alexander, William H., Canonsburg.
Barth, James Buchanan, Charleroi.
Bell, David Major, Claysville.
Booth, Alexander N., Bentleysville.
Braden, Leroy W., Ten Mile.
Burns, William James, Washington.
Carey, John H., Prosperity.
Cashman, Thomas G., Washington.
Colier, Ewing L., Roscoe.
Conner, Robert E., Hickory.
Corwin, James H., Washington.
Cotton, William G., Washington.
Craycraft, C. Clinton. Claysville.
Daugherty, George A., Washington.
Davis, Alden O., Charleroi.
Day, Minor H., Donora.
Dearth, Olie P., Washington.
Dodd, Cephas T., Washington.
Dodd, William Lincoln, Amity.
Dickson, William R., McDonald.
Donaldson, John B., Canonsburg.
Donaldson, Louis D., South Canonsburg.
Donahoo, J. Frank, Washington.
Dunkle, Gaily B., Washington.
Emory, Boyd A., Dunningsville.
Enos, J. Clive, Charleroi.
Faddis, Thomas M., Charleroi.
Farquhar, Raleigh Claude, 157 West Main St., Monongahela.
Frantz, George B., Coal Center.
French, Edward E., Ellsworth.
Gamble, William J., Gastonville.
Gormley, James A., Meadow Lands.
Griffith, Wilmer E., West Brownsville.
Haines, Dempsey D., Allenport.
Harsha, Charles Floyd, Canonsburg.
Harsha, James Vance, McKeesport (Allegheny Co.).
Hazlett, Edgar Marrion, Washington.
Hindman, Audley O., Cross Creek.
Hootman, David A., Wylandville.
Hunter, Joseph W., Charleroi.
Irwin, Joseph B., Washington.
Kelly, George M., Washington.
Kelso, John C., Canonsburg.
Kerchner, Louis F., Washington.
Lacock, Horace Mortimer, West Finley.
Lacock, Samuel A., Canonsburg.
LaRoss, William A., McDonald.
Lewis, David H., Washington.
Lewis, Orville Garrett, 841 Jefferson Ave., Washington.
Lewis, William H., Donora.
Linley, Collin M., Washington.
Linn, Charles Francis, Monongahela.
Linn, George A., Monongahela.
Lyle, John W., Houston.
McCall, Willis A., R. F. D. 3, Scenery Hill.
McCarrell, David Leander, Hickory.
McElroy, Joseph, Hickory.
McKay, Edwin M., Charleroi.
McKean, John A., Washington.
McKennan, James W., Washington.
McMurray, John Boyd, Washington.
McPheeter, William J., Florence.
Martin, William D., Sparta.
Maxwell, John Ralph, Washington.
Murray, Uriah B., Washington.
Nesbit, John C., Burgettstown.
Patterson, Frank I., Scenery Hill.
Patterson, Guy Egbert, Washington.
Patterson, John A., Washington.
Pridgeon, Lilly G. H., Canonsburg.
Repman, H. Joseph, Charleroi.
Reynolds, John M. C., Washington.
Riddle, William V., Burgettstown.
Ritchey, Elmer C., Knoxville (Allegheny Co.).
Runion, A. Legrand, Canonsburg.
Rutherford, J. Frank, Amity.
Sargent, Larry D., Beallsville.
Scott, Jesse Y., Washington.
Shannon, James H., Washington.
Shidler, Walter J., R. F. D. 1, Canonsburg.
Shuster, Alfred R,, Finleyville.
Simpson, William Lee, Independence.
Smith, John Knox, Charleroi.
Snodgrass, Henry L., Buffalo.
Sprowls, J. Ada, Donora.
Sprowls, John N., Claysville.
Sprowls, William W., Houston.
Stahlman, Fred C., Charleroi.
Stewart, Richard A., Independence.
Stewart, Robert S., Washington.
Teagarden, William D., Washington.
Thompson, Albert E., Washington.
Thompson, William R., Washington.
Timmons, Joseph M., West Alexander.
Throckmorton, Charles B., Canonsburg.
Upperman, William Alonzo, Houston.
Veatch, Nicholas S., California.
Wall, Porter Morrison, Monongahela.
Weirich, Collin R., Washington.
Weygrandt, William W., Thomas.
Wilson, T. D. Mutter, Washington.
Wolfe, Russell W., Taylorstown.
Wood, Charles B., Monongahela.
Woods, George B., Washington.

WAYNE COUNTY SOCIETY.

(Organized May 25, 1905.)

President. . Robert W. Brady, Honesdale.
V. Pres. . . . William T. McConvill, Honesdale.
Atherton B. Stevens, South Canaan.
Secretary. . Louis B. Nielsen, Honesdale.
Treasurer. . George T. Rodman, Hawley.
Reporter. . . Louis B. Nielsen, Honesdale.
Censors. . . . Edward W. Burns, Honesdale.
Fred W. Powell, Honesdale.
Arno C. Voigt, Hawley.
Com. on Pub. Policy and Legislation . Edward W. Burns, Honesdale.
William T. McConvill, Honesdale.
Harry B. Searles, Honesdale.

Stated meetings held the third Thursday of May, July, October and December at location decided upon at previous meeting. Annual meeting in May.

MEMBERS (21).

Brady, Edward W., Honesdale.
Burns, Edward Ward, Honesdale.
Cook, Alexander Marshall, South Canaan.
Corson, Frank W., Waymart.
De Kay, J. Miner, Matamoras (Pike Co.).
Ely, Harry B., Honesdale.
Gavitte, Edward B., White Mills.
Griffin, Patrick F., Honesdale.
McConvill, William T., Honesdale.
Nielsen, Louis B., Honesdale.
Noble, Homer C., Waymart.
Peterson, Pierson B., Honesdale.
Powell, Fred W., Honesdale.
Rodman, George T., Hawley.
Searles, Harry B., Honesdale.
Simons, Arthur J., Newfoundland.
Stevens, Atherton B., South Canaan.
Stevens, William A., Hamlinton.
Voigt, Arno C., Hawley.
Voigt, George Emil, Honesdale.
White, H. Cummings, Ariel.

WESTMORELAND COUNTY SOCIETY.

(Organized November 15, 1859.)

President. . Elmer E. McAdoo, Ligonier.
V. Pres. . . . William A. Marsh, Mt. Pleasant.
Thomas A. Klingensmith, Jeannette.
Secretary. . Myers W. Horner, Mt. Pleasant.
Treasurer. . Albert W. Strickler, Scottdale.
Reporter. . . Myers W. Horner, Mt. Pleasant.
Censors. . . . Jacob T. Ambrose, Ligonier.
Florence L. Marsh, Mt. Pleasant.
Edward P. Weddell, Scottdale.
Com. on Pub. Policy and Legislation. Florence L. Marsh, Mt. Pleasant.
Albert S. Kaufman, New Kensington.
William J. K. Kline, Greensburg.

Stated meetings quarterly as follows: The February and November meetings in Greensburg at 10 A. M. on the first Tuesday of the Court of Quarter Sessions held during the said months; and the May and August meetings, at such places as the society may appoint, on the first Tuesday of the said months except when held in Greensburg, in which case they shall be held, like the first mentioned, on the first Tuesday of the Court of Quarter Sessions. Four intermediate meetings, also, will be held during the year. Election of officers in November.

MEMBERS (90).

Alter, Joseph G., New Kensington.
Ambrose, Charles D., Ligonier.
Ambrose, Jacob T., Ligonier.
Barkley, John W., Ligonier.
Bearer, Albert J., New Kensington.
Blackburn, Ida E., Greensburg.
Boale, John A., Vandergrift Heights.
Bowman, George, Irwin.
Brown, J. Logan, Pleasant Unity.
Brown, Prentiss A., New Kensington.
Brown, Walter H., Youngwood.
Burhenn, Charles G., Jeannette.
Burkholder, John G., Ruffsdale.
Byers, W. Craig, Webster.
Caldwell, John D., Herminie.
Carnahan, William J., 202 Washington St., Vandergrift.
Caven, Alva H., Youngwood.
Cole, Thomas P., Greensburg.
Cramer, Morgan J., Monessen.
Day, Howard W., Monessen.
Easter, Daniel M., Greensburg.
Engle, O. C., Scottdale.
Ewing, John H., Delmont.
Fennell, William L., Salina.
Fetter, William H., Scottdale.
Gilbert, Levi T., Scottdale.
Goodsell, John Walter, New Kensington.
Griffith, Martin E., Monessen.
Hess, Oliver I., Scottdale.
Horner, Myers Worman, Mt. Pleasant.
Houghwout, B., Derry.
Houston, William T., Greensburg.
Hunter, William D., Monessen.
Hutton, David S., Smithton.
Jackson, J. Marcus, Stauffer.
Johnson, J. Barton, Ligonier.
Kaufman, Albert S., New Kensington.
Kimmel, Harry F., Derry Station.
Kline, William J. K., Greensburg
Klingensmith, Thomas A., Jeannette.
Koontz, David M., New Kensington.
Krebs, A. Bryan, Bolivar.
Kregar, Oliver J., Monessen.
Lamon, Goldson T., New Kensington.
Lawhead, James H., West Newton.
Long, John F., Harrison City.
Long, Joseph S., 269 Sherman Ave., Vandergrift.
Love, Hugh W., Harrison City.
McAdoo, Elmer E., Ligonier.
McClellan, Robert P., Irwin.
McConnell, Thomas E., Parnassus.
McMurray, H. Albert, Youngwood.
McNish, George T., Alverton.
McKee, Claude W., Scottdale.
McLain, Alexander M., Post Falls, Idaho.
Marsh, Florence L., Mt. Pleasant.
Marsh, William A., Mt. Pleasant.
Miller, George W., Greensburg.
Miller, Wesley W., Jeannette.
Montgomery, Mary L., Mt. Pleasant. (Honorary Member.)
Offutt, Lemuel, Greensburg.
Painter, Theodore P., United.
Patton, James M., 147 Jefferson Ave., Vandergrift.
Piper, Elmer N., New Kensington.
Porter, Clifford C., Greensburg.
Porter, Joseph A., Penn Station.
Ringer, John H., Jeannette.
Robinson, John Q., Jr., West Newton.
St. Clair, Thomas, Latrobe.
Shirey, Charles A., Manor.
Silsley, Nathaniel Eldridge, Scottdale.
Singer, John J., Greensburg.
Sleppy, Roy E., 1915 Beaver Ave., Allegheny (Allegheny Co.).
Sloan, Charles M., Madison.
Smith, L. B. Raymond, Jeannette.
Snyder, Charles E., Greensburg.
Speer, Ross H., Vandergrift.
Stahlman, Joseph C., Vandergrift.
Stauffer, Harry J., Jeannette.

Strickler, Albert W., Scottdale.
Strickler, James P., Scottdale.
Sutton, George S., Jeannette.
Taylor, Charles, Irwin.
Walker, Wilder J., Greensburg.
Weddell, Edward P., Scottdale.
Weddle, John N., Monessen.
Wilson, Arthur R., Monessen.
Wilson, Louis F., 215½ S. Main St., Greensburg.
Wilson, R. L., Jeannette.
Wynn, Charles A., Greensburg.

WYOMING COUNTY SOCIETY.

(Organized August 11, 1903.)

President. . Herbert L. McKown, Tunkhannock.
V. Pres. . . . C. R. Newton, Nicholson.
Secretary. . George M. Kinner, Mehoopany.
Treasurer. . George M. Kinner, Mehoopany.
Reporter. . . George M. Kinner, Mehoopany.
Censors. . . . Dennis W. Sturdevant, Laceyville.
Van C. Decker, Nicholson.
Com. on Pub.
Policy and
Legisation. Van C. Decker, Nicholson.
Dennis W. Sturdevant, Laceyville.

Annual meeting in Tunkhannock on the second Wednesday in January. Other meetings, not less than two, to be held as determined by vote of the society.

MEMBERS (12).

Bardwell, Frank J., Tunkhannock.
Bidleman, Bert E., Tunkhannock.
Cress, Walter M., Tunkhannock.
Decker, Van C., Nicholson.
French, Kinnard J., Factoryville.
Kelly, Hiram W., Nicholson.
Kinner, George M., Mehoopany.
McKown, Herbert L., Tunkhannock.
Merritt, T. Grey, Mehoopany.
Newton, Charles Russell, Nicholson.
Saxer, G. Philip, Fleetville.
Sturdevant, Dennis W., Laceyville.

YORK COUNTY SOCIETY.

(Organized May 11, 1873. Incorporated April 15, 1901.)

President. . Israel H. Betz, York.
V. Pres. . . . Joseph Bittinger, Hanover.
Arthur B. Shatto, York.
Rec. Sec. . . Laura J. Dice, York.
Cor. Sec. . . Alfred A. Long, York.
Treasurer. . Francis X. Weil, York.
Reporter. . . George E. Holtzapple, York.
Librarian. . Israel H. Betz, York.
Censors. . . . Isaac C. Gable, York.
Nathan C. Wallace, Dover.
Alfred A. Long, York.
Trustees. . . Samuel J. Rouse, York.
Wesley C. Stick, Hanover.
William F. Bacon, York.
Com. on Pub.
Policy and
Legislation. Isaac C. Gable, York.
James C. May, Manchester.
Edmund W. Meisenhelder, Jr., York.

Stated meetings in York, in Colonial Hotel parlor, first Thursday of each month, at 1 P. M. Election of officers in January. Library third floor of Court House.

MEMBERS (77).

Alleman, Horace M., Hanover.
Atkins, Joseph C., Red Lion.
Bacon, William F., York.
Bahn, George W., Spring Forge.
Baldwin, Thomas C., York.
Barshinger, Martin L., York.
Bennett, John F., York.
Betz, Israel H., York.
Bittinger, Joseph, Hanover.
Blank, John B., Wrightsville.
Brodbeck, John R., Codorus.
Butz, Raymond E., York.
Comroe, Julius H., York.
Dice, Laura J., York.
Dunnick, J. Nelson, Stewartstown.
Dunnick, Milton, Shrewsberry.
Eisenhower, Charles W., Jacobus.
Fackler, Lewis H., York.
Gable, Isaac C., York.
Galbreath, J. Thomas, Delta.
Gerry, Carl H., Shrewsberry.
Gilbert, John, York.
Gress, Henry V., Manchester.
Gross, Herbert F., Harrisburg (Dauphin Co.).
Gross, Jacob M., Dover.
Grove, Austin M., York.
Harding, Ralph A., Lewisberry.
Hartman, Lawton M., York.
Hawkins, Vallie, Fawn Grove.
Hildebrand, Charles G., Loganville.
Hoke, Martin, Spring Forge.
Hoover, Benjamin A., Wrightsville.
Holtzapple, George E., York.
Hyson, J. Miller, Red Lion.
Jessop, Roland, York.
Jones, Harry H., York.
Kain, John B., York.
King, Harry B., York.
Klinedinst, J. Ferdinand, York.
Lecrone, Harris R., York.
Long, Alfred A., York.
Lutz, Jeremiah F., Glen Rock.
McKinnon, Mathew J., York.
Mann, Enos S., Dallastown.
Markel, Henry C., Codorus.
May, James C., Manchester.
Meisenhelder, Edmund W., York.
Meisenhelder, Edmund W., Jr., York.
Melsheimer, John A., Hanover.
Miller, Joseph S., York.
Murphy, Jerry C., New Haven.
Myers, Alfred, York.
Overmiller, N. Allen, East Prospect.
Park, Edgar R., York.
Pfaltzgraff, Samuel K., York.
Porter, John W., New Park.
Ramsey, Warren R., Delta.
Rea, Charles, York.
Rouse, Samuel J., York.

Shatto, Arthur B., 116 South George St., York.
Shearer, Niles H., York.
Shirey, Bernard W., York.
Small, J. Frank, York.
Snyder, Francis J., York.
Spahr, Charles E., York.
Spangler, Benjamin F., York.
Spangler, Jacob R., York.
Stick, Wesley C., Hanover.
Strack, David, Thomasville.
Venus, Charles H., 817 E. Market St., York.
Wagner, William H., York.
Wallace, Nathan C., Dover.
Weil, Francis X., York.
Wentz, Alexander C., Hanover.
Yagle, George N., Red Lion.
Yagle, James L., New Freedom.
Zech, Luther E., York New Salem.

LIST OF PRESIDENTS OF THE STATE SOCIETY,
1848-1906.

*1848. SAMUEL HUMES, M. D., Lancaster County.
*1849. SAMUEL JACKSON, M. D., Philadelphia County.
*1850. WILMER WORTHINGTON, M. D., Chester County.
*1851. CHARLES INNES, M. D., Northampton County.
*1852. HIRAM CORSON, M. D., Montgomery County.
*1853. JOHN P. HEISTER, M. D., Berks County.
*1854. JACOB M. GEMMILL, M. D., Huntingdon County.
*1855. JAMES S. CARPENTER, M. D., Schuylkill County.
*1856. RENE LA ROCHE, M. D., Philadelphia County.
*1857. JOHN L. ATLEE, M. D., Lancaster County.
*1858. SMITH CUNNINGHAM, M. D., Beaver County.
*1859. D. FRANCIS CONDIE, M. D., Philadelphia County.
*1860-61. EDWARD WALLACE, M. D., Berks County.
*1862. GEORGE F. HORTON, M. D., Bradford County.
*1863. WILSON JEWELL, M. D., Philadelphia County.
*1864. J. D. ROSS, M. D., Blair County.
*1865. WILLIAM ANDERSON, M. D., Indiana County.
*1866. JAMES KING, M. D., Allegheny County.
*1867. TRAILL GREEN, M. D., Northampton County.
*1868. JOHN CURWEN, M. D., Dauphin County.
*1869. WILLIAM M. WALLACE, M. D., Erie County.
*1870. SAMUEL D. GROSS, M. D., Philadelphia County.
*1871. J. S. CRAWFORD, M. D., Lycoming County.
*1872. A. M. POLLOCK, M. D., Allegheny County.
*1873. S. B. KIEFER, M. D., Cumberland County.
*1874. WASHINGTON L. ATLEE, M. D., Philadelphia County.
*1875. CRAWFORD IRWIN, M. D., Blair County.
*1876. ROBERT B. MOWRY, M. D., Allegheny County.
*1877. D. HAYES AGNEW, M. D., Philadelphia County.
*1878. J. L. STEWART, M. D., Erie County.
*1879. ANDREW NEBINGER, M. D., Philadelphia County.
*1880. JOHN T. CARPENTER, M. D., Schuylkill County.
*1881. JACOB L. ZEIGLER, M. D., Lancaster County.
1882. WILLIAM VARIAN, M. D., Crawford County.
*1883. HENRY H. SMITH, M. D., Philadelphia County.
*1884. EZRA P. ALLEN, M. D., Bradford County.
*1885. E. A. WOOD, M. D., Allegheny County.
*1886. REES DAVIS, M. D., Luzerne County.
*1887. RICHARD J. LEVIS, M. D., Philadelphia County.
*1888-89. J. B. MURDOCH, M. D., Allegheny County.
*1890. ALEXANDER CRAIG, M. D., Lancaster County.
1891. SAMUEL L. KURTZ, M. D., Berks County.
1892. HENRY L. ORTH, M. D., Dauphin County.
1893. H. G. M'CORMICK, M. D., Lycoming County.
1894. JOHN B. ROBERTS, M. D., Philadelphia County.
1895. WILLIAM S. FOSTER, M. D., Allegheny County.
1896. E. E. MONTGOMERY, M. D., Philadelphia County.
*1897. W. MURRAY WEIDMAN, M. D., Berks County.
*1898. WEBSTER B. LOWMAN, M. D., Cambria County.
1899. GEORGE W. GUTHRIE, M. D., Luzerne County.
1900. THOMAS D. DAVIS, M. D., Allegheny County.
1901. FRANCIS P. BALL, M. D., Clinton County.
1902. WILLIAM M. WELCH, M. D., Philadelphia County.
*1903. WILLIAM B. ULRICH, M. D., Delaware County.
1904. ADOLPH KOENIG, M. D., Allegheny County.
1905. WILLIAM H. HARTZELL, M. D., Lehigh County.
1906. ISAAC C. GABLE, M. D., York County.

***Deceased.**

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X.
No. 7.

Athens, April, 1907.

Subscription :
$2.00 Per Year.

OFFICERS FOR THE YEAR 1906-1907.

President :
Isaac C. Gable, York.

Vice-Presidents :
First—Charles Emmerling, Pittsburg.
Second—William B. Ansley, Saltsburg.
Third—Philip R. Koons, Mechanicsburg.
Fourth—Henry M. Neale, Upper Lehigh.

Secretary :
Cyrus Lee Stevens, Athens

Assistant Secretary :
Theodore B. Appel, Lancaster

Treasurer :
George W. Wagoner, Johnstown

TRUSTEES AND COUNCILORS :

Thomas D. Davis, Chairman, 261 Shady Ave., Pittsburg, Term Expires 1908.
John B. Donaldson, Canonsburg, Term Expires 1909
William S. Ross, Clerk, Altoona, " " 1909
David H. Strickland, Erie, " " 1909
Geo. W. Guthrie, Wilkes-Barre, " " 1908
George D. Nutt, Williamsport, " " 1908
Henry Beates, Jr., Philadelphia, Term Expires 1907
Luther B. Kline, Catawissa, " " 1907
Thomas M. Livingston, Columbia, " " 1907
Isaac C. Gable, York, Ex-officio.
Cyrus Lee Stevens, Athens, "

Committee on Arrangements : Fremont W. Frankhauser, Chairman, 230 South Sixth St., Reading
Committee on Scientific Work : Theodore B. Appel, Chairman, 305 North Duke St., Lancaster.
Committee on Public Policy and Legislation: Henry Beates, Jr., Chairman, 260 South 16th St., Phila.
Committee on Archives : A. O. J. Kelly, Chairman, 1911 Pine St., Philadelphia.
Committee on Transportation and Place of Meeting : A. M. Eaton, Chairman, 2017 North 13th St., Phila
Committee on Malpractice: John B. Donaldson, Chairman, Canonsburg.
Committee on Credentials, House of Delegates: Alexander R. Craig, Chairman, 114 S. 18th St., Phila.
Committee on Inebriate Hospital: Theodore Diller, Chairman, Westinghouse Building, Pittsburg
Committee on Religious Newspaper Advertising: Albert P. Francine, Chairman, 1404 Spruce St., Phila.

OFFICERS OF SECTIONS:

Medicine—John A. Lichty, Chairman, 4634 5th Ave., Pittsburg. H. Herbert Herbst, Sec'y, Allentown.
Surgery—John H. Gibbon, Chairman, 332 So. 15th St., Philadelphia. Charles P. Stahr, Sec'y, Lancaster.
Specialties—Lewis H. Taylor, 83 South Franklin St., Wilkes-Barre. Robert Milligan, Sec'y, Pittsburg.
Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association : President, William J. Mayo, Rochester, Minnesota ; President elect, Joseph D. Bryant, New York; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago.
Next Annual Session, Atlantic City, N. J., June 4-7, 1907.

Address.

THE KINSHIP OF MEDICINE AND LAW FROM A LEGAL STANDPOINT.

BY ARTHUR G. DEWALT, ESQ.,
Allentown.

(Delivered before the Lehigh County Medical Society at its meeting held October 9, 1906.)

The subject I have undertaken to discuss is so wide that I much fear that the limited time and ability that I have will not enable me to do it justice. The old adage, "From lawyer's bills and doctor's pills, good Lord, deliver me," might be well applied in this instance, and the further remark, that long speeches like large doses are to be avoided, is also in point.

Nevertheless, I have undertaken briefly to explain to you the relationship of the professions of medicine and law. At common law, a right to administer drugs or medicines or to perform surgical operations was free to all, and such was the rule of the Roman Civil Law, and it was not until the reign of Henry V., in England, in 1842, that an Act of Parliament was adopted, prohibiting any one, under the penalty of both fine and imprisonment, from using the mystery of physics, unless he had studied it in some university, and was at least a Bachelor of Science.

This early statutory provision has been followed in all civilized countries, so that, at this time, the practice of medicine and surgery has acquired a legal standing and is subject to regulation by law. The constitutionality of such laws has been frequently questioned, but the supreme courts of every state and of the United States have uniformly decided that it is within the police power of the constituted authorities to regulate the practice of medicine and surgery, and the wisdom of such decision is no longer questioned.

It is not only a protection to the profession itself, but the higher and better ground is that it is a necessary protection to the public, and it would be well for all physicians and surgeons to remember that the statutes, both criminal and civil, which have been passed, regulating the practice of their profession, were intended, not so much to protect those who follow the science and art, as to afford due protection to the public at large against those who are quacks, and who have no legal right to practice.

Whilst it is true no particular school is recognized by the courts, in differentiation from any other school, except in regard to osteopathy, the theory of the law is to place all practicing physicians under a general system of regulation by which no one can practice unless he conforms to certain well defined rules, and without such conformance all practice is illegal. In this connection it may be stated that one who practices without a diploma, or without a license, can not recover fees. In other words, the contract is void, *ab initio*, and against the policy of the law.

The question has often been asked whether a licensed physician is privileged to refuse to attend any patient who attempts to employ him. It has been decided that this is his privilege, but, having once undertaken the care of the patient, he is obliged to continue such care unless he gives notice to the patient that he will cease his services, and then he must give such patient ample time to employ another physician.

The pay of physicians is usually a *quantum meruit* sum, but this does not prevent practitioners from entering into special contracts, and these contracts may include any stipulation which the parties may agree upon, and the physician may contract upon a contingent fee, dependent upon the successful treatment of the case. In this connection, it might also be stated, that, if a physician attends a charity patient, before quitting such service he must likewise give notice of his intention to quit and give ample time for the employment of another.

The relative duties of patient and practitioner are often the subject of discussion, and they may be briefly stated as follows: A sick man owes to his physician a full and detailed statement of his condition and the causes which led thereto, if they are within his knowledge or if he is able to communicate the same. It is also his duty to assist his attendant physician by proper observance of all the rules which are given him in regard to conduct and personal care, and a failure on his part to comply with these particulars absolves the physician from responsibility in ease of serious consequences.

The duty of a physician to his patient is that he furnish him ordinary and usual skill required in cases of like character. He is not required, as a matter of law, to give him the best skill in the profession, but he is bound to give him not only such skill as he has but a reasonable degree of proficiency. The law does not countenance quackery, and, although it does not require the most thorough education or the largest experience, it does require that an uneducated and ignorant man shall not, under the pretense of being a well qualified physician, attempt recklessly and blindly to administer medicines or perform surgical operations.

This is true, unless specialists hold themselves out to be peculiarly fitted for the treatment of certain diseases. Those who thus profess to be specially skilled, are obliged, under the law, to give more than ordinary and usual skill, and the reason for this is obvious. It might be well to state that a physician or surgeon can not contract that he will not be responsible for want of ordinary skill and care. The assumption of his duties presupposes that he guarantees that he will give ordinary care and skill. It has been said that it is against public policy for a physician to try experiments on his patients, and this applies to patients in hospitals, as well as those who are privately treated at their homes and from whom a large fee can be expected.

In regard to compensation it might be further said that one who calls a physician or surgeon to attend a patient is not presumed to have contracted to pay for the services rendered, unless his relations with the patient are such that he would be obligated in law to pay; the presumption is that the patient is liable, because he receives the benefit of the services.

Married women and infants generally are not liable, and in regard to the treatment of minors it may be said that it is necessary for physicians to show that the services were required. A married woman may make a valid contract for medical services for herself and her children, but primarily the husband and father is liable.

In this connection it might be well to state that in cases of accident upon railways, physicians who are called to attend the injured, can not recover from the railroad company for such a service, unless there be a special contract. This seems to be the trend of opinion, although, in some states, it has been held that the station master or the conductor in charge of a train, may legally employ a physician to attend those who are injured in railway collisions or accidents.

It is well known to most practitioners that, in this state, their bills for services are preferred claims against the estates of decedents, as far as those bills relate to the last illness; but in this connection it might be mentioned that it has been held, where physicians treat each other, and the custom is to do so without charge, such custom is considered binding in law.

In some states laws have been passed by virtue of which a physician may refuse to disclose confidential communications with his patient. In this state, the law of 1895 enables the physician, upon request of the patient, to refuse to disclose in a civil trial anything which might blacken the character of the patient. This law does not apply to criminal cases, nor to any matter which would not thus blacken the character.

The question has been frequently asked whether a physician, who has been subpenaed as an expert, is obliged to testify without extra compensation, other than his ordinary *per diem* pay and mileage. In response to this I would say that if the practitioner is the attending physician and is duly subpenaed, he is obliged to testify to all matters of fact, within his knowledge, without extra compensation. He then is in the same position as any other witness, and is merely testifying to facts. If he is not an attending physician, is merely called to give his opinion and deductions from facts within the knowledge of others, and is called as an expert, he can, before giving any opinion, state to the court, that he has no knowledge of the particular case in hand as to facts, and that he has not been paid as an expert, and therefore respectfully refuses to testify unless some compensation is given to him.

There is no subject in medical jurisprudence that has caused more discussion than this subject of expert testimony, and the criticism has been so wide and uniform that your profession has greatly suffered in the esteem of lawyers and in general estimation. The blame, if any there be, lies partly with the legal profession and partly with your own. Unfortunately it is true that many physicians and experts, when they are employed, consider themselves as advocates upon the side by which they are engaged, and it is not at all unusual to see men in your profession, of the highest rank, testifying as experts to certain and apparently well founded deductions, and at the same time to find an equal number of men of like standing testifying to the contrary.

In my opinion, this is a growing evil, and is so great, that, in the language of a very eminent lawyer, it might be said, after hearing the testimony in some cases, one would be warranted in saying that "medicine is an exact science practiced by very inexact men."

In so far as physicians lend themselves to the advocacy of theories of the defense or prosecution, or of the plaintiff or defendant, they are entirely wrong, and much of the evil that I have indicated arises from that fact. Experts are paid large sums of money by the parties interested, and at once become either consciously or unconsciously prejudiced witnesses, and endeavor to fit the facts with theories agreeable to their clients. The legal profession is also to blame in this regard. Lawyers, as a rule, state to physicians only such facts as are most agreeable to their side of the cause, and thus mislead their witnesses. Of course, it can be said that the conscientious physician should not be thus misled, but oftentimes the facts are not within his knowledge, and he must depend upon the statements of counsel.

The conscientious lawyer will present both sides of the picture to his witness, and thus obtain best results, for, unless he does this, cross examination will weaken his cause, but, even with this precaution, the evil that I have mentioned is quite apparent to both professions.

Is there any remedy for this? In my opinion it is quite simple of solution. My belief is that no expert should be employed by either side in any case; that if expert testimony is necessary, a list of those who are skilled should be submitted by both sides to the court, and then the court should choose from such list those who are to testify, and those witnesses should be paid by the state, or in civil cases by the losing parties, irrespective of the fact as to their being subpenaed by either party. It might be well to go even further than this, and leave the selection of experts entirely with the court, regardless of choice by the attorneys or suggestion by them. This, in my opinion, would free the expert from all bias, and place his testimony upon a much higher plane than it now has. The compensation should be sufficient to warrant those who are skilled, experts, in giving their time and attention to the subject in hand, and thus the best and most accurate view of the subject could be obtained by the court and jury trying the case.

It strikes me that this is a subject well worthy the attention of your profession, and legislation in this regard should be advocated by the members of this and other like bodies.

In this connection it might be well to offer some practical suggestions in regard to the duties of expert witnesses, and you will pardon me if I say that these thoughts are obtained partly by reading and personal observation.

1. A physician should refuse to testify

as an expert, unless he is conscious that he is really qualified as an expert.

2. After accepting the responsibility, his first duty should be to make a diligent examination and preparation for his testimony, unless it is upon a subject with which he is familiar and which he is satisfied that he has already exhausted by reading the best authorities that he can find and by careful reflection upon particular questions upon which his opinion will be asked.

3. Where he is to make an examination of facts, such as the postmortem examination of the body, a chemical analysis, or examination of an alleged insane person, he should insist upon having plenty of time and full opportunity for doing his work thoroughly. He should take particular pains to make his examination open and fair, and, if possible, should invite opposing experts to coöperate with him.

4. He should be honest with his client before the trial, in advising him and giving him opinions, and upon the trial should preserve an absolutely impartial attitude, concealing nothing, preverting nothing and exaggerating nothing.

5. On the preliminary examination, as to his qualifications as a witness, he should be frank and open in answering questions. He should state fully the extent and limits of his personal experience, and of his reading upon the subject, without shirking responsibility, and without self laudation.

6. He should be simple, plain and clear in his statement of scientific facts and principles, avoiding the use of technical language; calling a belly a belly, and not an abdomen, and trying to put his ideas in such form that they will be grasped and comprehended by men of ordinary education and intelligence.

7. He should avoid stating any conclusions or principles on which he is not certain, but when certain he should be firm and positive, admitting, however, the limitations of his knowledge and ability. When he is asked a question which he can not intelligently answer, he should not hesitate to say so, and should always avoid going into vague theories not warranted by the facts or scientific principles.

8. He should always bear in mind that, at the close of his testimony, he will have an opportunity to explain anything which he may be conscious of having said, which requires explanation. This opportunity is always given to the physician to set himself right with the court and the jury, and is often required by the uncertainty arising from a long examination and a baffling cross examination. It is true that the observance of these rules in their entirety would make an ideal expert witness, but they are so simple and easily followed, that a man of ordinary intelligence, when guided by them, can prevent his being made ridiculous, and, what is equally as bad, entirely useless to the cause in which he is a witness.

Will you pardon me, if I offer to this learned body a few practical suggestions as to the value of your testimony in cases of homicide and in damage cases, resulting from injury or death. Usually physicians are called in these cases to prove the results either of postmortem or of personal examination of the injury preceding death or injury without death, and, in many instances, their testimony is valueless, because the ordinary precautions have not been observed. If possible, when you make a postmortem, or an examination in a serious injury, have with you some one to take notes of what you observe, and let those notes be full and precise. In cases of homicide, note particularly the position of the body. If you are called immediately after death, and the body still remains at the place of the homicide, note the character of the soil, the condition of the ground, whether there be foot prints, or evidences of any struggle, and the presence of any weapon. Particular attention should be given to the position of the hands and feet, as this may be important in determining whether the injury was caused by accident or homicide. In cases of great importance, if possible, have a photograph taken of the body and the position in which it is found.

If the body is found in water, examine the character of the water and the temperature; if found near the shore, the character of the shore, and the bottom, as to whether the same has been disturbed. Examine carefully all clothing, all blood stains, if any there be; the form and direction of the blood stains; the character of the hemorrhage, whether profuse or limited. Have this well determined, as it may indicate whether the party died suddenly or not. Let a description of each article of clothing be taken; note and examine whether blood, if any, has fallen down the front of the clothing; whether it has soaked the inner garments, or whether it is collected along the back, for these appearances will sometimes demonstrate whether a wound was inflicted while the person was sitting, standing or lying down; for example, if the throat is cut, while the person is lying down, the blood will be found on each side of the neck, along the back and down the front of the body. Few suicides cut their throat in a recumbent position, and this distribution of blood may serve to distinguish a suicide from a homicide.

Note whether the weapon, if any there be, is found near the body, or if in the hand of the deceased, whether it is tightly grasped, or is loosely there. Be careful to note on which side of the body the weapon is found,as this is also important when there may be proof whether the individual killed was right or left handed or ambidextrous.

Examine carefully the handle of the knife as the blade may have been washed; if the weapon is found in the hand of the deceased, firmly grasped,it usually points to suicide, as the hand of a dead person can not be made to grasp or retain a weapon as firmly as does the hand which has grasped it at the last moment of life. If there be any gunshot wounds, look for wadding or paper found in the wound or about the body; sometimes these papers have hand writing upon them, or they may be a part of a printed page, the rest of which may be found in the possession of the accused. When you make postmortem examinations, do not be satisfied with examining only a portion of the body. You should be prepared to give to the chemist who assists you, if that be necessary, the stomach, the entire intestinal canal, the liver, one or both kidneys, the spleen, a piece of muscle from the leg, the brain, and any urine that may be found in the bladder, and it is of prime importance to preserve, in a sealed and labelled jar, those parts of the body which may show the evidence of disease or any malformation. Note particularly the color of the skin, whether there are any contusions upon the body, and the character of the same with their dimensions and situation. Probe the wounds carefully, so as to ascertain the depth, extent and direction of the same; the condition of the edges of the wound, so as to be clear in defining as to whether it was by cutting, or whether it was done by a pointed or blunt instrument, or by a bullet.

Ascertain with all certainty what nerves and blood vessels, particularly arteries, have been injured, and be certain whether a wound was made before or after death. In all wounds made after death, there is slight bleeding, noncontraction of the edges, and absence of blood in the tissues. This is the opposite of ante-mortem wounds, excepting in cases of wounds inflicted within two hours after death, where the difference is very slight.

Note the condition of the eyes, the rigidity and flexibility of the extremities; be careful to examine the genital organs for evidence of injury, or the presence of syphilitic lesions.

In suspected poisoning cases, the greatest care should be taken in the removal of the intestines and the stomach, and these should be placed in sealed jars, absolutely clean, and kept in the possession of the operator or chemist or some legal authority, preferably, however, in the possession of the operator himself, and after he surrenders them to the chemist, let it be done upon full receipt, with due description.

Particular attention should be paid in damage cases, to a thorough examination of the nervous system, and particularly the spinal cord. There is no subject which baffles the expert witness and sometimes the attending physician more than malingering, and those who are seeking large damages sometimes become so skillful in concealing the true state of their condition that they are able to deceive the wisest practitioner and the most skillful lawyer.

I need not mention to you the various tests which are used in discovering deception in such cases, but I would suggest, that, if called as an expert in such matters, it is your duty to demand a personal examination of the claimant, not only once, but frequently, before trial, and then not alone but in the presence of his attending physician and, if possible, the physician of the adverse party.

I fear that I have tired you with a prosy and lengthy discussion, but ere I leave you, I wish to talk of one other subject, and that is the question of mental responsibility of those accused of crime, or those who have made their last wills and testaments.

There is no branch of medical jurisprudence which is more discussed than mental responsibility, and the view points of the lawyer and the physician are somewhat different. To the lawyer, it matters not how the seed of insanity was sown, nor the growth of the plant, except as confirmatory evidence that the plant is there. With him the sole question is its existence, its degree, and its influence on the conduct, not therefore a medical but a moral one. To the physician, mental disturbance is simply a brain disease. He has to prevent or cure it, and therefore the whole history of the patient, embracing the causes and development of the disease, and the changes bodily and mental are for him the objects of study. With the physician, the main question is to prevent the progress of the disease, and prolong the duration of the life of the patient.

With the lawyer, the simple question is, has the disease progressed so far as to prevent the party from knowing the difference between right and wrong, and from consciously doing that which he knows to be wrong at the time, and with respect to the act which is the subject of inquiry.

All lawyers start with the presumption that every one is legally responsible. Physicians start with the knowledge that some are abnormal from their birth, and, therefore, physicians are far more prone to regard individuals irresponsible than laymen or lawyers. It is to be regretted that so many practitioners are willing to testify in homicide cases, in regard to mental responsibility of the defendant without sufficient knowledge of the previous history of the accused.

It strikes me that a conscientious expert upon this subject, would refuse to testify in a matter of life or death, unless he was able to convince himself that he was fully cognizant of the previous history of the party in regard to whom he gave his testimony.

We all know that domestic troubles, adverse circumstances, business losses and the like, mental anxiety and worry, intemperance both in eating and drinking, sexual intercourse, venereal diseases, self abuse, overexertion, pregnancy, puberty, change of life, fevers, privations, old age, uterine and ovarian diseases, hereditary influences, and congenital defects are exciting and superinducing causes of insanity.

I think I am warranted in saying that in very many instances, physicians attempt to answer hypothetical questions which are not based on any statements in regard to any one of these different subjects. Usually, the lawyer frames his hypothetical question upon facts which are proved in the case. Unfortunately, many necessary facts are not proved, and I therefore utter this word of caution that, where physicians are called as experts in insanity cases, they should insist, as far as possible, in having the attorneys inform them in regard to as many of the matters above referred to as are applicable to the case in hand.

If I were to use my own pleasure and try your patience, I could continue in this strain upon allied subjects at great length, for I assure you, gentlemen, the kinship of these two professions is far closer than the ordinary mind has any conception of, and the theme is so fruitful and so worthy of your attention, and mine, that the feeble effort I have given it, is doing but little justice to it. However, it is but the beginning of what I hope will be further progress in this direction; namely, the closer association of the two professions, and a mild recognition of the duties that they have to and for each other, for I assure you that no man can be a good lawyer unless he knows something of medicine, and no doctor can be a good physician unless he knows something of law.

INGROWN TOE-NAIL.

It is doubtful whether the classical operations for ingrown toe-nail cure permanently in even a fair percentage of cases. Conservative treatment will usually accomplish as much, even in the presence of granulating masses. This treatment includes drawing the flesh away from the nail with a strip of adhesive plaster, insertion of a gauze packing under the nail edge and the application of an absorbent antiseptic dressing.—*American Journal of Surgery.*

Original Articles.

ETIOLOGY AND SYMPTOMATOLOGY OF STENOSIS OF THE PYLORUS.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Of the numerous abnormal conditions of the stomach, that of stenosis of the pylorus is one of the most frequent, and is of paramount importance, and one in which all the technic of the skilled diagnostician is required to determine, first, the existence of stenosis, and, second, the character of the lesion, whether benign, or due to malignant disease, for upon the correct solution of this problem largely depends the treatment in each individual case, and also a prognostication of what will be the progress of the affection, and whether or not there is hope for the amelioration of the patient's condition, or an almost absolute certainty of a rapidly progressive and fatal termination.

In considering the subject, the etiology and symptomatology of this condition will be briefly considered and a few cases which have come under my observation will be cited as illustrating the causes of this affection and the symptoms which accompany the same.

Stenosis of the pylorus may be defined as a narrowing of the natural caliber of the pyloric orifice. It may be congenital or acquired, benign or malignant. The causes producing this affection are ulcers, injuries to the stomach, chronic gastritis, hyperacid gastritis, pressure, tight corsets, irregular living, alcohol in excess. Gastroptosis may also be a cause: adhesion may also produce an occlusion and some authors give stone in the gall bladder as one of the causes.

In benign stenosis the condition may be coming on for ten to fifteen years, especially if it has been caused by a chronic gastritis, but if the condition is due to ulcer, the stenosis will occur much sooner, and the symptoms will be more acute.

In benign stenosis, the symptoms may be very bad one week, and then a stage of amelioration sets in, when the patient will enjoy fairly good health, but in a short time the pain and gastric symptoms return and the vomiting becomes more severe, the patient loses flesh, becomes pale and nervous, the cramp and pain increase; the stomach will cramp and feel like a ball under the hand; this condition is caused by the stomach trying to force the food through the closed pylorus.

In most cases of stenosis there remains a small opening which permits a small amount of food in liquid form to pass through, and this accounts for the patient not losing as much flesh as might be expected.

In this condition there is sometimes quite a hemorrhage from the stomach, which, without doubt, comes from the ulcer which is causing the stenosis.

In the majority of these cases we find a hyperchlorhydria but there are cases in which the acidity is very low, and the hydrochloric acid entirely absent. In these cases, there is no doubt in my mind but that the patient has had a chronic gastritis for years, which has destroyed the glands.

The pains come on shortly after meals and are cramp-like in character; these pains will last for several minutes at a time; the stomach will churn the food and try to force it through the natural channel. The patient loses flesh, becomes anemic and weak. In the early stages very little food will be found in the stomach in the morning, but later in the development of the disease, the stomach retains most of the food and it is not long before advanced ectasis exists. The bowels, as a rule in these cases, are constipated. On examination of the contents of the stomach, there is generally found a hyperacidity and hyperchlorhydria with sarcinæ, and also a quantity of food eaten days before, sometimes blood, the food bad smelling.

The tumor in benign stenosis is about the size of a walnut, and consists mostly of fibrous tissue. When stenosis responds to treatment it is due either to ulcer or some nervous condition. Cancer of the pylorus may be due to injury or the result of a chronic ulcer; in this condition the growth is rapid and death generally occurs in about a year unless relieved by operation.

The pain is boring in character and constant, the patient loses flesh rapidly and becomes cachectic, will vomit at any time, and frequently blood will be found in the vomitus; hydrochloric acid is absent as a rule, especially if there is considerable gastritis; but it is present in many cases; lactic acid is frequently found present, but not in all cases.

The presence of the Oppler-Boas bacillus, and constant pain, rapid growth of tumor at the pylorus, stagnation of food, vomiting with rapid emaciation, are pretty sure diagnostic points of cancer of the pylorus. The following cases which have come under my observation are cited as illustrations.

Case 1. A bookkeeper, fifty years of age, had stomach trouble for years. He was in the habit of leaning against his desk, which would cause pressure over the stomach. When I first saw him, he was weak and emaciated; food remained in his stomach until vomited or removed by lavage; his stomach was in an advanced stage of ectasis, but he did not complain of any pain, cramp or peristaltic unrest.

On examination of the stomach contents on several occasions, the acidity was ten, but there was found neither hydrochloric nor lactic acid. The patient was too weak for an operation and died in a few days. The autopsy elicited a funnel-shaped thickening of the anterior and posterior walls of the stomach, including the pylorus. I excised the thickened tissues of the pylorus, made a microscopical examination and found nothing but fibrous tissue. This was later confirmed by Max Einhorn.

This case was evidently caused by the constant pressure of the stomach against the desk, which probably caused the development of gastritis and this destroyed the glands of the stomach and resulted in a thickening of the walls of the stomach and pylorus.

Case 2. A sign painter, forty-two years of age, had had more or less stomach trouble for over twenty years; he would have attacks of sub-acute gastritis every little while, his trouble grew gradually worse. He consulted me at this time. He was emaciated, complained of pain in the pyloric region, which was very sensitive to pressure. He would vomit great quantities of food and at times considerable blood, and had frequent eructations of gas; his weight was reduced from 130 pounds to 92 pounds.

On examination of the stomach contents I found hyperacidity and hyperchlorhydria, with numerous sarcinæ. A diagnosis of benign stenosis of the pylorus due to ulcer was made, and an operation advised. A gastroenterostomy was performed, the surgeon pronouncing the condition cancer of the pylorus. The patient is living now over two years after the operation in the enjoyment of good health, which verifies the former diagnosis.

Case 3. A laborer, fifty-eight years of age, began having stomach trouble five years ago; he would have pain and distress after meals, which were followed by nausea; he did not vomit at first, as the food would pass through, but would cause considerable distress. Two years before he consulted me, he began vomiting and losing flesh; he had lost forty pounds. He had cramp and peristaltic unrest, the pain increasing and the tumor growing rapidly.

On examination of the stomach contents, hyperacidity and hyperchlorhydria were found, but a diagnosis of cancer of the pylorus was made, which was unquestionably the result of a chronic ulcer. A fatal termination followed in about five months.

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DIFFERENTIAL DIAGNOSIS AND TREATMENT OF PYLORIC STENOSIS.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It is rather difficult to differentiate between a pathological condition of the pylorus proper, and one occurring anywhere in the duodenum above the papilla of Vater, or in the stomach within an inch or two of the pylorus. I shall, therefore, base my remarks upon those conditions which may present the symptoms of pyloric stenosis occurring within the region extending from a circular line in the stomach an inch or two from the pylorus to a transverse line in the duodenum passing through the papilla of Vater. Within this region certain conditions may occasion the symptoms either of a partial or a complete stenosis. If partial, it may be due to a functional or an organic condition. If it is organic, it may be benign or malignant. If it is a complete stenosis it is organic, and may be either benign or malignant. The symptoms of an apparently complete stenosis will disappear very readily with appropriate treatment if no organic lesion exists.

I shall not consider in this paper practically complete congenital stenosis of the pylorus, which from recent writings is shown to be a not infrequent condition. A specimen of such a case was recently exhibited before the Pittsburg Academy of Medicine by Dr. F. B. Miller.

There are occasional patients with symptoms of partial stenosis and other gastric symptoms, giving a history extending back to their earliest recollection, who I think have a congenital condition at the pylorus. To these I shall refer later.

Before considering the differential diagnosis of pyloric stenosis, I shall, for the sake of clearness, again enumerate the usual and immediate symptoms, objective and subjective, which indicate its presence. They are (1) food retained and recovered from the stomach about seven hours after eating, (2) characteristic pain and tenderness, (3) peristaltic unrest of the stomach, (4) dilatation of the stomach, (5) vomiting, (6) loss of weight, (7) diminution of the daily amount of urine, (8) anemia, (9) a tumor or palpable mass in the region of the pylorus, (10) constipation, (11) disturbance of gastric secretion. These symptoms have already been minutely described by Dr. Dickinson, and at present I shall not discuss them. With one or more of these symptoms present, the diagnosis of pyloric stenosis should be either confirmed or excluded. But the diagnosis can not be based upon the signs and symptoms alone; a very concise history is necessary, and a certain knowledge of the progress of the disease must be obtained by observing the patient for a reasonable time under favorable conditions of diet and surroundings. Too much care and system can not be instituted in obtaining the history of the patient previous to and during the immediate complaint.

It would be an insult to your intelligence were I to rehearse the data which such study reveals. There will usually appear one or other of the many primary conditions which have finally led to stenosis. A patient will not soon forget a pain, sudden, severe and intermittent, or dull, heavy and continuous, which may have been the only symptom of an early preëxisting ulcer or gallstone attack, or pancreatitis, or perigastritis. But he may not consider it of such importance in his present illness as to mention it. The taking of a history should be conducted upon about the same lines that an attorney conducts a cross-examination. Failure in diagnosis of the condition under consideration is too often the result of hurry and lack of attention to detail.

When the symptoms correspond with those of pyloric stenosis and the history is suggestive of it, there remains, before the diagnosis can be made, the necessity of differentiating from other conditions which may resemble stenosis, or which may be found in the vicinity of the pylorus. These conditions are (1) simple atonic dilatation of the stomach, (2) the vomiting of pregnancy, (3) simple hyperchlorhydria, (4) right movable kidney, (5) gastroptosis, (6) gastric neurasthenia, (7) subacute gastric ulcer, (8) hourglass stomach, (9) certain affections of the pancreas, (10) cholecystitis, with or without local peritonitis. All but a few of these conditions may cause an actual pyloric stenosis, partial or complete, and may therefore enter into the symptom complex and may also be the most important factors in determining the course of treatment. I shall discuss each separately.

Simple Atonic Dilatation of the Stomach. There may be associated with this most of the symptoms of pyloric stenosis, but there is no definite and characteristic pain and tenderness, neither is there a history of earlier attacks of severe pain. There is rarely periodical vomiting or peristaltic unrest. There is no induration or thickening at the pylorus, and correction of possible errors of diet and proper treatment bring the stomach back to its normal size and position. Theoretically, it seems very easy to differentiate between these two conditions, but practically it is usually difficult. Fortunately dilatation of the stomach never in itself presents urgent and alarming symptoms. The physician can therefore take ample time to prove its presence alone by curing the patient. If the symptoms become alarming, he can rest assured that there is also a pyloric stenosis.

The Vomiting of Pregnancy. This has been known to be so persistent, that, when the patient either willfully or otherwise has deceived the physician by not giving a complete and correct history, the existence of pyloric stenosis has been entertained. The true history, or a pelvic examination in the course of time, will of course always reveal the real condition.

Simple Hyperchlorhydria. This is characterized by pain which comes on an hour or two after meals, when digestion is at its height and when most of the food has already passed the pylorus. The pain is relieved by eating, or by the administration of alkalies. There is also tenderness below the ensiform cartilage, occasionally dilatation of the stomach and attacks of vomiting, loss of weight, diminution of urine, anemia, and usually constipation. This includes nearly all the symptoms of pyloric stenosis, but in simple hyperchlorhydria the fasting stomach contains no food remnants, and the institution of proper treatment will relieve the symptoms early and permanently if the treatment is continued, even though the stomach contents remain hyperacid for some time. I think it is possible for an intermittent pyloric stenosis of a functional nature, or a pylorospasm to exist as the result of the excessive acid continually bathing and irritating the pylorus. In these cases it is difficult to determine which is primary, but the proper treatment for hyperchlorhydria will usually relieve both conditions. In a former paper read before the Pittsburg Academy of Medicine (see *American Medicine*, Vol. X. No. 18, pages 739-741) I insisted that the diagnosis of simple hyperchlorhydria should not be made until all other conditions have been excluded. According to Mr. Moynihan of Leeds, the symptoms of hyperchlorhydria should disappear promptly and permanently with proper dietetic treatment. If they do not, he feels confident that a duodenal ulcer is present, which sooner or later may perforate or produce the symptoms of pyloric stenosis. While I am not yet willing to make so definite a statement, I am all the more convinced that the diagnosis of simple hyperchlorhydria should be made with caution.

Right Movable Kidney. Rarely, a right movable kidney may produce the symptoms of pyloric stenosis, especially if the kidney becomes attached by adhesions to any of the organs with which it comes in contact. I wish to report briefly a most instructive case in my own experience in which the right kidney produced symptoms of intermittent pyloric stenosis as well as other misleading symptoms.

Diagnosis at one time, gallstone; at another time, gastric ulcer. Exploratory operation. Band of adhesion which constricted both common duct and duodenum was severed. Recovery.

Mrs. D., aged thirty-seven years, consulted me first, November 13, 1904. Eighteen months ago she had an unusually severe attack of indigestion with headache, and vomiting of bile. Since then she has had recurring attacks, similar in nature but accompanied with intense pain in the epigastric region. During the intervals there was more or less tenderness over this region. Fourteen years ago she gave birth to an only child, and during her convalescence she had an attack which was diagnosed gallstone. She was jaundiced, but has not been jaundiced since. In my physical examination, I noted that the patient was emaciated, that the stomach was dilated to the umbilicus, there was tenderness over the pyloric region, and that the right kidney was freely movable. The gastric contents showed free hydrochloric acid, 28; combined hydrochloric acid, 22; and total acid, 82. I made a tentative diagnosis of chronic gastric ulcer, with possibly a perigastritis.

The treatment established, afforded considerable relief for about seven months. During this time I occasionally felt a mass in the pyloric region, which I at one time diagnosed as an indurated pylorus, and later as a distended gall bladder. Suddenly, at the end of the seven months, she had a severe attack of pain in the epigastrium and was intensely jaundiced. I then dagnosed gallstone, and the abdomen was opened by Dr. R. W. Stewart. To our surprise we found neither gallstone nor gastric ulcer, but a band of peritoneal fold which extended from the under surface of the left lobe of the liver to the hilum of the right kidney, which was prolapsed. We could demonstrate that tension of this band could make pressure upon the common duct, the cystic duct and the duodenum. This fold was severed and the abdomen closed. It is now about fourteen months since the operation, and the patient seems entirely well. She has had no pain nor tenderness in the epigastrium.

Where there are symptoms of stenosis associated with a movable kidney, it is well to recall the possible symptoms which the kidney may produce.

Gastroptosis. It is said that a prolapsed stomach may fall in such a position that the pylorus becomes kinked, and thus the symptoms of stenosis arise. I have never in my practice satisfied myself absolutely that I have found such a condition in the thirty cases of gastroptosis which have been under my observation. In a simple gastroptosis there is neither pain nor tenderness, no peristaltic unrest, no palpable mass, though the pylorus may be in a position to be palpated. Besides, the history does not conform with that of stenosis. Of two hundred thirty-six cases of gastric and duodenal ulcer operated by Mr. Moynihan, only one, which gave the symptoms of stenosis, was found to have a gastroptosis.

Gastric Neurasthenia. Patients having nervous dyspepsia may, as is well known, have all the symptoms of pyloric stenosis. On the other hand patients with chronic stenosis of the pylorus may develop a line of nervous symptoms which may lead one to overlook or disregard entirely the gastric condition. It is, therefore, very difficult in some cases to determine the true state of affairs. Some ten or fifteen years ago when hysteria or neurasthenia was the "catch-all" for many of those conditions which were not fully understood, and when abdominal surgery, especially the surgery of the upper abdomen, had not yet revealed the pathological possibilities which we now know, I have no doubt that many cases of pyloric stenosis, as well as chronic gastric and duodenal ulcer were overlooked, were called neurasthenia and were badly treated, or, worse than that, neglected. When some of the symptoms suggesting pyloric stenosis are present, especially dilatation of the stomach, or vomiting of stagnant contents, even though the nervous symptoms may seem to predominate, the patient should receive the benefit of the doubt, and should be carefully observed, especially with reference to a possible partial stenosis. It may be necessary at times to make an exploratory operation to clear up the diagnosis.

Subacute Gastric Ulcer. A gastric ulcer in the region of the pylorus may produce the symptoms of a temporary pyloric stenosis, especially if the ulcer is quite recent and produces considerable hyperplasia, or if it is particularly hypersensitive. But there is usually blood in the vomitus, there is not the characteristic vomiting of retained food, and with a few days or a week of absolute rest of the stomach the symptoms will subside and may never return, thus showing that there was no real stenosis. I have observed this in a number of cases.

Certain Affections of the Pancreas. The pancreas, as Mayo Robson has pointed out in his Hunterian Lectures on the Pathology and Surgery of Certain Diseases of the Pancreas, at times entirely surrounds the descending portion of the duodenum, and when it becomes enlarged from any cause, such as catarrh of the ducts, or chronic interstitial pancreatitis, or from a cyst or a new growth, it may produce a pyloric stenosis with all its symptoms. Even without such an anatomical rarity the presence of a growth or a cyst of the pancreas may by pressure cause a pyloric stenosis. But usually other symptoms of pancreatic disease will be associated with the pyloric symptoms, such as diarrhea, the stools showing undigested fats and albumins. There may also be jaundice and glycosuria, and the tumor, if palpable, is felt.

Hourglass Stomach. The constriction of an hourglass stomach is nearly always within four inches of the pylorus (Robson). If it is very near the pylorus, and spasm exists due to hyperchlorhydria, it may be impossible to differentiate from a true stenosis, but this is of small importance as the treatment for the two conditions is practically the same. If the contraction is not so near the pylorus and the distal pouch is large, the well-known phenomenon of having the wash water after it has become clear suddenly without any warning return foul again, owing to the second cavity having regurgitated its contents into the proximal clean one, will reveal the true condition.

Inflammation of the Gall Bladder and Ducts. This condition in itself may produce a pyloric stenosis. The gastric symptoms are then added to the gall bladder symptoms. Again, the symptoms of inflammation or obstruction of the gall ducts may arise in a subject already possessing a dilated stomach of the atonic type. But the gall duct symptoms are not so closely related to the time of ingestion of food as are the stenosis symptoms. The pain is not the same, and the vomiting is different. There are other conditions, such as perigastritis and tubercular peritonitis which for a time may give disconcerting symptoms, but it is rare that such conditions can be confused with pyloric stenosis. I shall not take them up in detail but will go on to take up the differential diagnosis between benign and malignant stenosis of the pylorus.

There is no field in internal medicine today which is more inviting and more timely than the study of the early diagnosis of cancer of the stomach. The surgeons with their remarkably low mortality rate in gastric work, are putting us as internists into a position from which there is no retreat. We must make an earlier diagnosis of gastric cancer. While I have counseled waiting and avoiding hasty conclusions in making a diagnosis of pyloric stenosis, I do not wish it to be understood that I advocate any such deliberation should there be the least evidence or possibility of malignancy. The time has come when he who allows his gastric cancer patients to go on until they develop the symptoms of pyloric stenosis may be justly considered reprehensible. It would seem to be, therefore, not necessary to make a differentiation between benign and malignant pyloric stenosis, for the diagnosis of malignancy should be made before the symptoms of stenosis appear, but there are cases in which a gastric ulcer may, by repeated healing and recurring, produce a scar mass sufficient to cause symptoms of stenosis that may exist for some years, and finally malignancy may be engrafted upon the ulceration and the symptoms of gastric cancer may appear. I have seen this in a number of cases and was able to confirm it in one remarkable case to which I shall refer later. I have for this reason long ago ceased saying to patients, or to physicians with whom I have consulted, that because the gastric symptoms have extended over two or more years the idea of malignancy need not be entertained. It may arise any time in the course of any gastric symptoms. Then also a certain class of patients will not consult a physician until the most severe symptoms have arisen. I have quite frequently in consultation seen patients who only a week or ten days before had consulted their family physician for the first time concerning certain dyspeptic symptoms, but who already had a very decided if not a complete malignant pyloric stenosis.

In making the differential diagnosis between benign and malignant stenosis the following points must be taken into consideration.

1. *Age.* The patient is usually more than twenty years of age. From time to time as observations on cancer cases are more closely made and recorded, this age

limit is being reduced, and I predict that it will not be long until we will agree that the cancer age begins with the age when gastric or duodenal ulcers may appear.

2. *Heredity.* I am not convinced that an hereditary history of cancer has any greater or less significance in these cases than the hereditary history of tuberculosis has in tuberculous cases. Our ideas of heredity in tuberculosis have changed since the discovery of the tubercle bacillus, and the same change of opinion will no doubt take place when once the cause of cancer is known. It is well, however, to be suspicious of cancer when there is an undoubted hereditary history in a case having marked digestive disturbances.

3. *Clinical History.* The clinical history of cancer is usually significant. The patient has been continuously ill for several weeks, months or a year. There has been little if any relief of symptoms, regardless of whatever treatment may have been instituted. The weakness, emaciation and cachexia are synchronously progressive. In this it differs largely from benign stenosis, where the symptoms are often intermittent, and the patient may have varying periods of relief and apparent evidences of absolute cure.

4. *Pain.* The pain of malignant pyloric stenosis is more constant than in benign stenosis. It is not so likely to be cramp-like, or to be relieved when the stomach is empty. It may be a late symptom.

5. *Stomach Contents.* The vomitus of cancer cases has a peculiar odor, which if once noticed can never be forgotten. It is fetid, having the odor of decaying flesh. I have several times concluded a diagnosis, after considering other vague symptoms, absolutely upon this sign alone. There is nearly always a small amount of blood to be found in the vomitus, rarely a hemorrhage such as occurs in gastric ulcer. The Oppler-Boas bacillus is often found, and is a very strong evidence of cancer. There is usually no free hydrochloric acid in the vomitus. The test breakfasts show a gradually diminishing or an absence of hydrochloric acid, unless it be a case of gastric cancer implanted upon a chronic ulcer. In such cases an excessive amount of hydrochloric acid may continue for some time, and its presence continue until death. I have seen this in several cases, confirmed by autopsy. This again emphasizes the necessity of being suspicious and on the lookout for malignancy in all cases of chronic ulceration at any age. It is not likely that one would mistake a case of pernicious anemia, where there is usually an achylia, for the achylia of a gastric carcinoma giving the symptoms of obstruction. Nearly always in pernicious anemia the stomach empties itself promptly and there is no stagnation of food. I believe that the absence of free hydrochloric acid is not associated with carcinoma of the stomach alone, but also with carcinoma in other parts of the body. I have frequently noticed this in cases of mammary, uterine, and, several times, in intestinal carcinoma.

6. *The Blood.* In cancer in general, the cachexia is out of all proportion to the anemia, whereas, in those forms of pernicious anemia giving gastric symptoms, the anemia is out of proportion to all other symptoms. This is a safe rule to depend upon, and yet in cases of gastric cancer implanted upon chronic ulceration where there has been continuous loss of blood, and at times considerable, the anemia may be very severe before there is marked cachexia. A blood examination which shows an anemia should never be misinterpreted, by overlooking a possible source of hemorrhage.

7. *Enlargement of Glands.* The glands of the axilla and the groins may soon become enlarged. It has been noted by some observers that the supraclavicular glands on the left side are likely early to become enlarged. A diagnosis of gastric carcinoma

should be made before there are any palpable glands.

8. *Tumor.* In pyloric stenosis a mass is occasionally palpable. When it is malignant, it is usually nodular and increases in size quite perceptibly in a short time.

9. *Urine.* In simple pyloric stenosis the excretion of urea is diminished. This is so marked and constant that occasionally the stenosis is overlooked and the diagnosis of nephritis is made. In a stenosis due to malignancy the urea is very perceptibly increased.

Unfortunately these signs and symptoms of malignancy which I have mentioned are all late ones and do not arise until the time for a successful radical operation has passed. Neither are any of them pathognomonic. But when they are considered, and cancer can not be positively excluded, it is justifiable after mature deliberation to do an exploratory operation. This will probably confirm a suspicion and lead to an earlier radical operation. Or it may reveal an unexpected condition which can be readily relieved. I do not hesitate to advise such a procedure. It has never in my cases proved to be an unnecessary operation, and the outcome has always been highly satisfactory to the patient as well as to myself. It would seem that after once entering the abdominal cavity it ought to be very easy to distinguish a malignant mass in the walls of the stomach or duodenum from a benign process, but such is not the case.

I take the liberty of quoting in full from Mr. Moynihan of Leeds, who in his admirable report upon the Surgical Treatment of the Nonmalignant Diseases of the Stomach, before the surgical section of the British Medical Association in 1905, said: "The tumor-mass which results from the exudation and induration around the base of an ulcer may be almost impossible to distinguish from a malignant growth. In my early cases I made at least three such mistakes, and patients whom I then supposed to be suffering from carcinoma too advanced for removal, are to-day quite well and the tumors have disappeared. On the contrary I have in one case mistaken a malignant growth near the pylorus for a simple one, and though, in this instance, the possibility of the grafting of malignant disease on the base of chronic ulcer can not be denied, the length of life (fourteen months) seems more in keeping with the suggestion of a mistaken diagnosis. I am strongly of the opinion that I can now differentiate between simple and malignant tumor-masses without any difficulty. In malignant disease the growth is irregular, nodular, gritty on the surface, the edge is infiltrating and the glands are hard. In simple disease the surface is everywhere smooth, the peritoneum has a milky opacity, and the glands, if enlarged, are soft. Intimate adherence to the parts around is more often seen in simple than in malignant disease."

While such a statement from so great a surgeon and investigator as Mr. Moynihan may be encouraging to us as internists who often feel our limitations, especially when attempting a diagnosis of gastric carcinoma, it should not encourage us to the extent that we cease from attempting an early diagnosis of these cases. Our efforts should be all the more intense.

Before leaving this part of my subject I wish to call attention to a new hemolytic reaction of the blood serum of those having malignant growths, which was reported and described in full by Dr. George Kelling of Dresden before the Thirty-fifth Congress of the German Surgical Association, April, 1906. I can give only a short description of this remarkable paper which can be found in the *Archiv. für Klin. Chirurgie*, Bd. 80, Heft. 1. Dr. Kelling who has been a student of Professor Ewalt, and for some time assistant in the late Professor Mikulicz's clinic, has found an albumin in the juice of cancers which is peculiar to it and entirely different from any albumin existing normally in the human body. He states that this peculiar albumin is due to the growth of a parasitic embryonal cell which comes from some vertebrated animal. By experimentation upon the blood of various animals utilizing Uhlenhuth's and Rössle's methods and results, he has found an hemolytic reaction between the blood serum of individuals affected with cancer and the red corpuscles of the blood of chickens. His conclusions are as follows: (1) There are individuals suffering from cancer whose blood serum gives an hemolytic reaction with the blood corpuscles of certain vertebrated animal species whose embryonal cells reside in the body which is affected. (2) This reaction is constant and not dependent upon change of diet. (3) The same reaction which reveals the primary tumor also reveals metastatic growths. (4) This reaction disappears or grows weaker, by a radical removal of the tumor. (5) The same reaction occurs in an animal by injecting tumor masses into that animal. (6) This reaction shows remarkable biochemical conditions, which are the same when embryonal cells from vertebrated animals are injected. (7) The results have no relation to Conheim's theory. (8) The hemolytic reaction is the same as the precipitin reaction. (9) It is possible to diagnosticate occult malignant tumors by following out the test with the necessary precautions. (10) Through the use of this test in clinical surgery, new information on the question of tumor growths can be obtained.

Dr. Kelling has found the test positive in about fifty per cent. of his cancer cases. Dr. Hemmeter of Baltimore, who has used the test, reports that he also has found it positive in fifty per cent. of the cases having cancer of the alimentary tract. It is too early to tell what clinical value this hemolytic test will have, but if Dr. Kelling's results can be confirmed, it is a long step towards making an earlier diagnosis of cancer of the stomach.

Treatment. The late Professor Riegel says "Gastrectasia following stenosis must be relegated to the field of surgery; in these cases operative interference alone leads to cure." It might seem from this statement that any consideration of nonsurgical measures is almost unnecessary. In extreme stenosis surgical interference can not be undertaken too promptly. There are cases, however, of varying degree and character of stenosis in which medical or rather nonsurgical treatment will accomplish satisfactory results. A patient who has a recent gastric ulcer should be kept under continued observation, and as soon as nutrition seems to fail and the slightest indication of dilatation of the stomach appears, most rigid dietetic precautions should be established. This is all that can be done by way of prophylaxis, but it may mean a great deal to the future comfort of the patient.

When a partial stenosis is present, the diet must be changed, so as not to cause any unnecessary irritation at the pylorus, and must be sufficient in nutritive value to maintain the patient's normal weight, or, better, a weight slightly above the normal. The diet will be determined largely by the condition of the gastric contents and the degree of stenosis and dilatation. The food must not be coarse and must not be such as will ferment easily. It should be given often. The necessary daily amount of food should be divided into four or six feedings. It may be necessary to give milk and raw eggs exclusively at first, and, as the strength of the stomach permits, other food, such as purées of green vegetables and finely ground grains which are well cooked, may be added. I have used for several years a very satisfactory preparation of dried lentils which have been passed through a process similar to the milling of wheat.

When well cooked it can be stirred into a glass of milk or eaten as a gruel or ordinary cereal. It is nutritious, and not at all irritating. Cream, butter and olive oil can be added to the diet. Next, scraped beef and soft boiled eggs may be given. After this, if the symptoms permit, the diet may be gradually increased, but always avoiding coarse and irritating foods. The weight of the patient must always be observed and the diet regulated accordingly. If the weight can not be held to the normal or increased, the patient should be asked to lie down much or all of the time. It is my practice to put cases of suspected or partial stenosis in bed upon a modified rest treatment. In this way the diet can be better controlled and the patient more thoroughly studied. It is remarkable what rest in bed will do for these cases. Remedies may be needed to alter or aid gastric secretion and to prevent fermentation. Among these I may mention resorcin, bismuth betanaphthol, calcined magnesia, dilute hydrochloric acid, nux vomica, belladonna, hyoscyamus, strontium bromid, and nitrate of silver. With thiosinamin, which was recently suggested and spoken of so highly at the Scranton meeting, I have had no experience.

If, after following out such a course as I have described, the symptoms of obstruction remain, gastric lavage, either with sterile water, normal salt solution, or boric acid or bicarbonate of soda solution, should be done. It should be done early in the morning or at about four P. M., before the heaviest meal is taken. A few washings may be all that is necessary. It should be done by the physician himself or by a competent nurse. I am convinced that much harm can be done by allowing a patient to use the stomach tube indiscriminately, or without very specific directions. Massage, electricity and physical exercise will help to improve the general nutrition. The patient should be asked to dress warmly and especially to keep the abdomen well protected from sudden changes of temperature.

If, after a systematic treatment such as I have described, the patient can be kept only comparatively comfortable, or if the symptoms are not controlled or are increasing, it will be necessary to look upon the condition from a surgical standpoint. Where malignancy is diagnosed or suspected, the surgeon should be called in consultation at once. Where there is no malignancy it may be as well to convince yourself and your patient that every means has been employed without any real benefit. Of course the physician must be careful not to allow the patient to get into such an extreme physical condition as to make a subsequent operation more hazardous.

The question as to when the surgeon shall be called and what he shall do when he is called in these cases has been widely discussed and answered in many ways. One authority who is well known, in a most conservatively written article upon the indications of surgical interference in gastric conditions, introduces his subject by saying "If it is true that the highest aim of the physician is to protect life," etc., and ends by saying, "When a cure is not obtained by palliative measures and life is threatened by continuous pain or profuse hemorrhages, when there are symptoms of cicatricial stenosis not relieved by lavage or when there is perforative peritonitis or subphrenic abscess, surgical procedures *may be indicated.*"

The operation for benign pyloric stenosis is the most successful and satisfactory of all operations on the stomach. And when the diagnosis is established and relief is not found by the measures I have mentioned, one should not hesitate to have the patient operated upon. The mortality of gastroenterostomy with many surgeons is now less than four per cent., and with a few surgeons, such as the Drs. Mayo of

Rochester, Mr. Robson of London, and Mr. Moynihan of Leeds, less than one per cent.

Because of the low mortality and the immediate relief afforded, posterior gastrojejunostomy is most frequently done for pyloric stenosis. The best results are obtained without the use of the Murphy button. From the nature of the condition it has for some time been impressed upon me that the low mortality of posterior jejunostomy is too often the only reason for its use in pyloric stenosis, and that, if pylorectomy or pyloroplasty could be done as expeditiously and as safely, it should in many cases be performed, where now a makeshift is done in the way of a gastrojejunostomy. The cicatricial tissue at the pylorus is a frequent nidus of beginning cancer, therefore, if it can be removed, it ought to be done. In spite of the improved technic, the artificial opening will too often close up. On account of the tendency for cancer of the pylorus to remain circumscribed to an unusually limited area, excision should be undertaken more frequently. The Finney operation or some such procedure, therefore, in my opinion, should largely supersede the operation of gastroenterostomy.

As internists we are ready to applaud the brilliant results achieved by the surgeon with the operation of gastroenterostomy, but we are withholding a tremendous applause, besides more substantial things, for the operator who will reduce the mortality of pylorectomy or pyloroplasty to less than one per cent. I will report a case which illustrates my contention.

Mrs. B., fifty years of age, consulted me first in May, 1901. Her chief complaint was of pain in the abdomen, in the region of the pylorus, a restless feeling in the stomach, and periodical vomiting. A partial pyloric stenosis was diagnosed, which gradually increased to such a degree that in July, 1902, a posterior gastroenterostomy had to be performed. The operation was successfully performed by Dr. J. J. Buchanan who used the Murphy button. The pylorus was free and not any larger than normal, but it was firm, showing that the stenosis was about complete. It was thought to be secondary to gastric ulcer. The patient was comfortable for a time, but in 1903 had several attacks of what was called acute indigestion. The patient now placed herself under the care of Dr. Chalfant of Pittsburg, to whom I am indebted for the following report:—

September, 1905, Dr. Chalfant found a small mass at the pylorus. The stomach was again greatly dilated. In doing lavage it could be demonstrated that the gastroenterostomy opening was still patulous, but evidently constricted. The mass at the pylorus enlarged, and in February, 1906, the abdomen was again opened by Dr. Buchanan, with the purpose of removing the mass if possible. The extent of the mass was found to be such that removal was impossible. The patient recovered from the operation, but died later probably from a local peritonitis. A partial autopsy showed a very hard growth involving the pylorus and extending out into the anterior and posterior walls of the stomach, the pylorus being completely closed. The fundus was greatly dilated and seemed to be separated from the pyloric end by a narrower portion. The gastroenterostomy opening was about one centimeter in diameter. The liver did not seem to be involved. No very evident glandular involvement was discovered. The gall bladder was small, walls thickened, contained about one cubic centimeter of clear fluid, and the cystic duct was obliterated. Lying in the dilated fundus of the stomach were found the two pieces of the Murphy button. The hard mass was reported to be a scirrhous carcinoma of a very low grade of malignancy.

Without any reflections upon those who were connected with this case, I feel reasonably sure that if I had had a pylorectomy done at the first operation the patient might still be alive.

Occasionally a case of only slight stenosis will have very distressing and obstinate symptoms, which can not be successfully controlled. It has been my custom to advise against surgical interference in these cases because the pylorus was still patulous, and because the new opening would be more likely to close under such conditions. I took this position upon the advice of my surgical colleagues in my own city, and upon information which I obtained at the clinic of the Mayo's in Rochester, Minn., I am becoming convinced that surgical assistance should be extended to those cases also. In one such case in which the operation was performed over eighteen months ago the result has been highly satisfactory.

Mr. J. W., aged 28, consulted me first in December, 1903. He had had an attack of jaundice without pain five years before, and now gave the symptoms of hyperchlorhydria. The stomach was dilated two inches below the umbilicus, and the gastric contents were excessively acid (free hydrochloric acid, 30, and total acid, 76). He had been washing his stomach frequently, and was greatly emaciated. After three months of treatment, the stomach was normal in size and position, and the patient was comfortable. In January, 1905, the patient returned with all his former symptoms. After a few weeks of treatment in the hospital under favorable conditions, it was decided to perform a gastroenterostomy. Dr. E. S. Montgomery operated, using the Murphy button. A chronic gastric ulcer was found at the pylorus whose indurated base partially blocked the opening. The patient passed the button *per anum* on the fourteenth day, and left the hospital a few days later. He has not had any symptoms since.

In these cases of only partial stenosis it would probably be safer not to use the Murphy button, but excise a generous strip from the stomach wall where the artificial opening is made. I am informed by Mr. Moynihan that a patulous pylorus is not a contraindication to gastroenterostomy, and that no fold need be sewed in the pylorus, as some do, to complete the obstruction.

In malignant stenosis of the pylorus, the results of surgical operations are, of course, not so satisfactory, but the relief from suffering which a gastroenterostomy affords, makes the operation highly justifiable. I wish finally to call attention to a procedure which I think should be considered in gastric surgery, and that is the necessity of excising *in toto* all ulcers when they are found. In Dr. Mayo's clinic I saw a small, innocent-looking ulcer excised, which in its margin had a malignant growth the size of a split pea. Had this remained the patient would have been doomed. No doubt the surgeon will object to this suggestion on the ground of increased mortality, but again I must remind the surgeon that it is his business to perfect the operation so that the procedure will be safe and practical.

The surgery of the stomach is but begun. The end results are not yet fully known, but each year the indications and procedures are more clearly defined and the results are more satisfactory.

HYPERCHLORHYDRIA AND ITS TREATMENT.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

This paper is based upon the observations made upon the cases we have studied in the Dispensary of the University Hospital and in private practice.

The causes of hyperchlorhydria are business and domestic worry, mental overwork, working under a strain and in a constant rush, excessive and rapid eating, ingestion of large quantities of sweetmeats and fried foods, particularly by brain workers, sexual excesses and continued indulgence in tobacco and alcohol. A strong neurotic factor predominates in nearly all cases.

The most important symptom is a burning, gnawing distress in the epigastrium, about two hours after taking food, which may be referred to the interscapular region. This distress will persist until the next meal is eaten when it is relieved by the ingestion of food. The period of comfort after taking food becomes shorter and shorter as the patient becomes worse, and the distress in advanced cases occurs so soon after meals that we are apt to be deceived by a history of discomfort immediately following meals. It is frequently present in the morning on arising. Sleep is restless and broken by dreams, though frequently the patient will say that he sleeps soundly and heavily. He awakens unrefreshed and as tired as when he went to bed. He is tired and sleepy all day and thinks he could fall asleep anywhere, but on reclining, often finds himself wide-awake and unable to keep his eyes closed. This symptom occurs early, and often before any disturbance of the stomach is noticed.

Constipation is a common condition and is due to the greater digestion of the coarser parts of the food than normally. In a smaller number of cases there is no disturbance of the bowels, or there even may be diarrhea.

A dull frontal headache, coming on at awakening, is common. This is apt to wear away as the day advances or after taking food. Apathy, indolence and an indifference to the usual objects of interest occur and are often present before the distress in the stomach. The patients are irritable, nervous and sensitive to slights.

Flatulence and acid eructations are common.

The appetite is usually large, though in many it will not be apparent until enough food is taken to relieve the gastric distress. Nausea and vomiting occur rarely.

Many of these patients have rheumatism, and, while the relation between the excess of hydrochloric acid and rheumatism is not clear, there are enough of such patients to excite comment. These rheumatics are apt to become indolent, irritable and impatient. They frequently complain of persistent itching of the scalp and skin. The urine is usually highly acid and contains an excess of urates, which will stain the vessel after standing. Nocturnal urination is common.

Loss of weight will be seen in those who have denied themselves with the hope of relief, or who have been wrongly directed in diet.

Floating kidney is found occasionally in the highly nervous cases. In the chemical analysis of the stomach contents after a test breakfast, we will find the hydrochloric acid running above 60. Many cases, however, will give all the principal symptoms of a hyperchlorhydria and will show a hydrochloric acid content as low as 50 or 40. On the other hand, many normal persons, with no symptoms pointing to hyperchlorhydria, will always show an excess of the acid. So, while it is necessary for diagnosis to make an estimation of the acid after a test meal, one can not be influenced by this alone, but must consider the symptoms also. Hyperchlorhydria must be differentiated from gastric ulcer. In ulcer ingestion of food causes pain, and in hyperchlorhydria it relieves the distress which returns at the height of digestion. In ulcer there is a sharply localized area of pain, which may be radiated to the loins or shoulder blades, and which may be elicited by pressure; in hyperchlorhydria, there is a diffuse sensation of discomfort in the whole epigastric region but no pain, and pressure does not cause pain. In ulcer, blood occurs in the vomit or is found in the stools; in hyperchlorhydria there is no hemorrhage. It must be borne in mind that ulcer may occur in cases of hyperchlorhydria.

Biliary colic may confuse in some instances. In this, however, the pain does not come on at such regular periods after the ingestion of food, and is not relieved by taking food or alkalies.

In the treatment, the most important thing is to eliminate that condition, which has been the causative factor. A change of scene and environment many times has been sufficient to make a cure without the use of any drugs. On the other hand no drugs nor combinations of drugs have been able to relieve some patients, who have continued to live under the same pernicious influences which have caused the disorder. Writers differ as to the character of the diet, which is best suited to these cases; some prefer the stimulating proteid diet, which excites the secretion of hydrochloric acid but combines more readily with the excess of acid than any other; while others favor the bland carbohydrate and hydrocarbon diet, which has little stimulating effect upon the acid cells, but which does not combine so readily with the acid. It does not seem reasonable nor right to use a diet in such cases, which, though it relieves the distress quickly, will later provoke the same condition of affairs. Nor, on the other hand, do we find sufficient relief from the starch and fat diet to justify us in using it exclusively. It has been our custom to order for these patients a mixed diet, consisting of small quantities of meat two or three times a day, moderate quantities of potatoes and other starchy foods, little or no sugar, and an abundance of milk, cream, butter, eggs, crackers, dry and toasted bread, spinach, string beans and squash. The patients are instructed to take three moderate sized meals daily and just before the onset of the discomfort, to take a glass of milk and some crackers or dry toast, to absorb the excess of the acid and bring relief. When it is impossible to take the extra meals we must have recourse to the alkalies alone to relieve the acidity. We forbid sweets, fried foods, acid fruits and vegetables, alcohol and tobacco; and restrict tea, coffee and salt. It is easy for a confirmed smoker to give up tobacco, for he soon finds that smoking hastens the onset of the distress and exaggerates it, if it is present.

Of drugs, the alkalies are the most useful and of these the heavy calcined magnesia is the best. The dose of the magnesia is ten to thirty grains; its laxative property adds to its value. Where a dose sufficient to relieve the acidity acts too freely upon the bowels, or when constipation is not a factor, subnitrate of bismuth is combined with it. Bicarbonate of soda in doses of fifteen to sixty grains is of great value.

Alkaline waters, such as Celéstine Vichy, assist in this neutralizing process and help also by diluting the acid. The dose of the alkalies must be large enough to neutralize the acidity and must be given before the time of the onset of the distress; that is, one and a half to two and a half hours after food is taken. Olive oil taken before food has helped in some cases, but whether this has been because it has coated erosions of the pylorus, as has been claimed, we can not say. In addition to the alkalies we have been accustomed to order a pill containing a quarter of a grain of nitrate of silver and a twelfth to an eighth of a grain of extract of belladonna, before meals. Instead of this a tablet of one one hundredth of a grain of atropin may be used. Many of the highly neurotic cases show no relief until large doses of a bromid are given. A dose of thirty to sixty grains given twice a day has usually sufficed. The morning headache can be relieved in about half of the cases by powdered guarana. This must be given when the stomach is empty in doses of one half to one teaspoonful, stirred in a little water, and must be followed by a short period of rest. It has the additional advantage of being slightly laxative.

GASTROPTOSIS WITH SPECIAL REFERENCE TO ITS TREATMENT.*

BY JOHN J. GILBRIDE, A. B., M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The purpose of this paper is to direct attention to a disease that is a frequent cause of chronic invalidism, particularly in women, and to the fact that anomalies in the position of the stomach are more frequently overlooked than recognized.

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*From Professor Sailer's Clinic for Diseases of the Stomach and Intestines, Philadelphia Polyclinic Hospital and College for Graduates in Medicine.

Gastroptosis is a falling of the stomach, existing alone or more commonly in association with dislocation of one or more of the other abdominal organs. The right kidney, transverse colon, and liver are the organs most frequently dislocated in conjunction with the stomach, less frequently the left kidney, and only very rarely the spleen.

Figure 1 shows the normal position of the stomach.

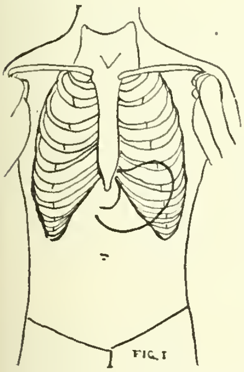
FIG. 1

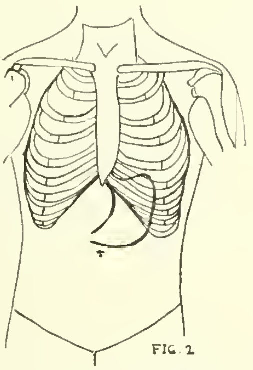
FIG. 2

The stomach may be dislocated partially or in its totality. Partial displacement in which there is a sinking of the pyloric end of the stomach is the more common, while total falling of the stomach is less frequent owing to the attachment of the cardia to the vertebræ. The type of dislocation of the stomach will be determined by the position of the pylorus and of the lesser curvature. Therefore, to make a diagnosis of gastroptosis, it is not sufficient to determine only the lower boundary of the stomach, but the lesser curvature must also be found in a lower position than normal.

The stomach may assume the vertical, Figure 2; subvertical, Figure 3; or the crescent form, Figure 4. The subvertical position of the stomach is the most common, while the crescent or looped shape is least frequent. As a rule, however, gastroptosis is complicated by a more or less advanced degree of dilation of the stomach.

Figure 6 shows a dilated dislocated stomach with downward and lateral dislocation of the liver. Figure 10 represents a dilated and dislocated stomach with dislocation of both kidneys.

The symptoms are usually those of atony of the stomach and intestines, with accompanying motor insufficiency. There is frequently present gastric retention and fermentation and nearly all patients are constipated. The appetite is impaired and the patients are weak and often in a state of malnutrition. Malposition of the stomach and certain neurasthenic and hysteric symptoms are frequently found together. There are cases of gastroptosis, however, in which there are no symptoms. A floating tenth rib and other congenital stigmata are relatively common in cases of gastroptosis. In fact, many cases have a typical visceroptotic physique. The abdominal walls are usually relaxed, particularly in multiparous women. Diastasis of the recti-abdominal muscles is also common.

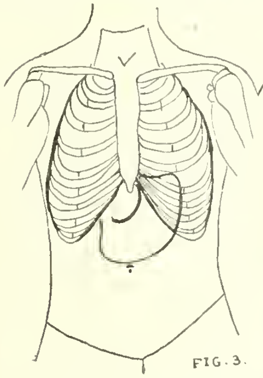
FIG. 3.

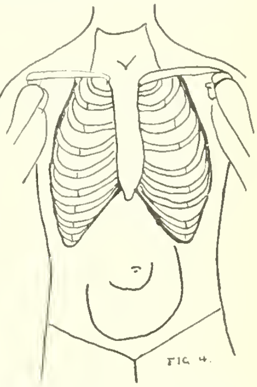
FIG. 4.

The diagnosis of gastroptosis is usually not difficult and can be made in most instances by the ordinary clinical methods at our disposal, *i. e.*, inspection, palpation, percussion, and inflation. Auscultory percussion and tuning for percussion are valuable aids in outlining the stomach. There are undoubtedly a number of cases in which simple inspection will reveal the fact that the stomach is situated low down in the abdomen, Figure 5. Many of these patients have a long slender body with a bulging of the lower part of the abdomen and a sinking in of the epigastrium. However, it is always better not to content oneself with inspection alone, but always to control the diagnosis by inflation of the stomach.

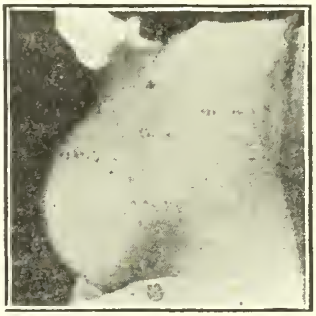

FIG. 5.—Gastroptosis in a woman of 47. Lateral view showing a prominence of lower part of the abdomen.

The gastrodiaphane is recommended by some clinicians for outlining the stomach. In doubtful cases the Röntgen ray and the bismuth method probably form the best means of determining the boundaries and the position of the stomach. Figures 7, 8, and 9 represent the size and position of the stomach as shown by drawings made from Röntgen ray pictures, through the courtesy of Dr. Charles B. Worden. Figures 7 and 8 show the vertical stomach with its irregular outline. Figure 9 illustrates a low position of the stomach, and dislocation of the transverse colon with adhesions between it and the descending colon.

The treatment of gastroptosis should be preventive as far as possible. Therefore, clothing that forces the abdominal organs downward should be modified and more attention should be paid to bandaging the abdomen in women during the lying-in period so that the abdominal muscles may regain their normal tone and the abdomen its normal shape. This part of the treatment appears to be neglected and the tendency on the part of many practitioners is to discard the use of the abdominal binder following childbirth. This is a mistake as attested by the condition of the abdomen in women who have borne several children. The treatment proper of dislocation of the stomach is largely mechanical. Rest cures that force the patient to lie still sometimes act favorably.

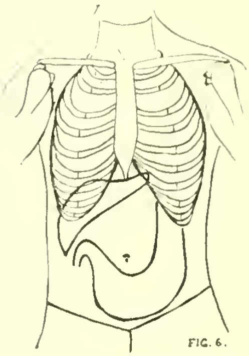

FIG. 6.

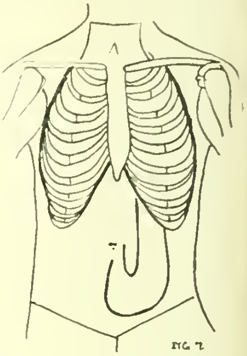

FIG. 7

The relief experienced by many patients after the application of an abdominal support is most gratifying. Various forms of bandages for supporting the abdominal organs have been recommended. No one form of binder or bandage fits all patients; therefore, the bandages will have to be adapted in each individual case. Adhesive plaster, as advised by Dr. Rose of New York and others, when properly applied, serves very well as a temporary bandage. The plaster is cheap and causes but little inconvenience. The patient may wear it for a week or two, or until it becomes loosened, when a new one should be applied, and the customary bath may even be taken while wearing the plaster. A cloth

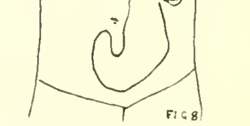

FIG 8

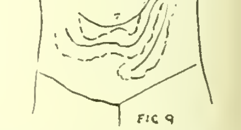

FIG 9

bandage or form of corset may be employed and should have some attachments to prevent the corset from slipping out of place.

Wherever much pressure is brought to bear, a suitable pad should be inserted. In some cases this treatment, together with a regulation of the diet, is all that is necessary. Of course, the patient will have to wear the support permanently, except in rare instances.

The diet should be nutritious and easily digestible, therefore small meals of a soft diet at frequent intervals will probably best accomplish this purpose, as this form of diet does not tax the motility of the stomach and passes readily into the intestine, while a dry diet is not discharged as easily from the stomach. Any stated diet list can not well be given as the food should be suited to the condition of the gastric secretion and motility. The patient should lie down after eating. Liquids are best administered in small quantities, a glass or two of water should be taken when the stomach is empty. Many of these patients suffer from a dryness of the tissues; therefore a sufficient amount of water should be administered.

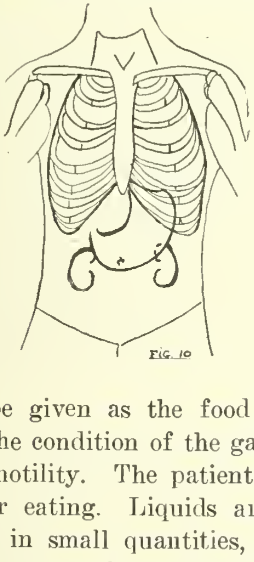

FIG. 10

Lavage is indicated when there is retention. When atony and ectasis are present, hydrotherapy, massage, gymnastics, electricity, and the administration of strychnin are of value. The stools should also be carefully regulated. However, there are cases, particularly overworked neurasthenics, who do not improve under the treatment while they remain at home and continue their occupation. In these cases a change of environment with mental and physical rest is sometimes followed by marked improvement.

I saw recently a married woman, aged twenty-eight, mother of five children, who had gastroptosis with severe neurasthenia. She did her own housework, and in her case no improvement took place under medical treatment including bandages, etc. This woman was sent to Atlantic City and upon her return a few weeks later I saw her again. She had gained in weight and there was a complete disappearance of all the symptoms.

The medical treatment as outlined should be persistently applied, and, therefore, given a long trial before surgical measures are advocated. Consideration must also be given to the fact that the patients often are of a profound neurotic type. However, there are cases in which this treatment does not give relief. Vomiting persists, dyspeptic symptoms continue to be severe, there is a gradual emaciation, and in these cases operation is to be recommended. There are also cases of gastroptosis in which the position of the stomach produces a kink or twist at the pylorus as pointed out by Kussmaul, which may require surgical intervention, as will those cases in which peritonitic adhesions, tumors, etc., exist.

Duret[1] of Lille performed the first operation of "gastropexy" by stitching the lesser curvature of the stomach to the abdominal wall. The patient, a married woman, did well and in two years gained twenty-five pounds in weight.

Davis[2] performed a similar operation, but instead of suturing the stomach to the abdominal wall, he passed the stitches through the gastrohepatic omentum.

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[1] *Revue de Chir.*, 1896, p. 430.

[2] *Western Med. Review*, October, 1897, p. 291.

Rovsing[3] operated in three cases of gastroptosis by passing the sutures transversely through the anterior wall of the stomach, and at each end through the abdominal wall. The anterior surface of the stomach was scarified with a needle, and in tying the stitches adhesions to the abdominal wall were secured.

Hartmann[4] fixed the pyloric end of the stomach to the parietal peritoneum, after plicating the dilated pyloric end.

Coffey[5] elevated the stomach in two cases by suturing the greater omentum at a point one inch below the attachment of the transverse colon to the anterior abdominal wall one inch above the umbilicus.

Clarence Webster of Chicago in 1901 advised, in cases associated with diastasis of the recti muscles, that this condition be remedied by resection of the fascia and approximation of the muscles.

The most satisfactory method for elevating the stomach is probably the one described and performed by Beyea.[6] In this operation the stomach is elevated by shortening the normal ligamentary supports, *i. e.*, the gastrohepatic and gastrophrenic ligaments. By this method the motility of the stomach is not interfered with. A similar operation has been performed by Bier.

In an operation which has for its object the production of adhesions between the stomach and abdominal parietes, the motility of the organ is disturbed, and the last state of the patient is probably as bad as the first.

Gastroenterostomy has been performed a number of times for gastroptosis.

Pyloroplasty is also to be recommended in suitable cases. The cases of gastroptosis that have been operated upon are reported as being greatly improved by the operation.

The importance of the effect of the acid gastric juice on the motility and secretion of the duodenum and also between the gastric secretion and the secretory functions of the intestine, pancreas, and liver, has been shown by Hirsch and von Mering, and confirmed by Pawlow. Bayliss and Starling have also shown the effect of the acid gastric secretion in the duodenum in that it excites the secretion of secretin. Therefore, in operations on the stomach, it is desirable, when conditions permit, to preserve the pyloric duodenal route.

CLINICAL RESULTS FROM EXAMINATION OF FECES AFTER INTESTINAL TEST DIET.

BY CLEMENT R. JONES, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It is not my intention in this paper to takes up at length the subject of the examination of feces but merely to call attention to some of the clinical observations made and the benefits to be derived from the use of the newer methods of examination of fecal matter after the use of the test diet as advised by Professor Dr. Adolph Schmidt of Dresden.

We all know the examination of fecal matter is not a general practice among physicians, who pay far too little attention to the condition, quality and quantity of the food that is ingested by the average patient, to say nothing of the examination of the residue as it is passed from the alimentary canal. We are even able to find those who do not find it necessary to make analyses of stomach contents in the examination of serious gastrointestinal troubles.

In the investigation of any supposed disturbances of function of the intestines or the glands supplying them with secretions, namely, the pancreas, the liver and the intestinal glands, it is first necessary to learn, by analysis of stomach contents after suitable test meals, in what state the various foods ingested are passed from the stomach into the duodenum. This is revealed by the character of the gastric juice and the known action of the various ferments and hydrochloric acid upon the different varieties of food. Knowing just what foods are properly prepared by the stomach we are now able to advise a diet that will reach the intestines in such a condition as will make possible a normal digestion of the food in the intestines. Having made the necessary examination of stomach contents which should not be merely one test meal analysis but should include a number of test meals taken at intervals, and, having made the usual observations as to location, mobility, etc., we are now prepared to take up the investigation of the ability of the intestines to digest the various foods; that is, the albumins, starches, oils, etc. Aside from what we are able to learn of the completeness with which these foods are digested, we may be able to throw light on a number of possible pathological conditions indicated by the presence of pus, mucus, amyloid discharge, occult blood, ameba, the different varieties of bacteria and other elements not normally present in the intestines.

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[3] *Archiv. fur Chirurgie*, Bd. LX., 1899, p. 812.

[4] *Societe de Chirurgie*, April 19, 1899.

[5] *Philadelphia Medical Journal*, October 11, 1902.

[6] *Philadelphia Medical Journal*, February 7, 1903.

The intestinal test diet advised by Dr. Schmidt and translated into English by Dr. Charles D. Aaron is as follows:—

In the morning: 0.5 liter milk, or, if milk does not agree, 0.5 liter cocoa (prepared from 20 gm. cocoa powder, 10 gm. sugar, 400 gm. water and 100 gm. milk).

In the forenoon: 0.5 liter oatmeal gruel (made from 40 gm. oatmeal, 10 gm. butter, 200 gm. milk, 300 gm. water, 1 egg strained).

At noon: 125 gm. chopped beef (raw weight) broiled rare, with 20 gm. of butter, so that the interior will remain raw; to this add 250 gm. potato broth (made from 190 gm. mashed potatoes, 100 gm. milk, and 10 gm. of butter).

In the afternoon, as in the morning.

In the evening, as in the forenoon.

After becoming familiar with the appearance of normal feces as the result of this test diet, one is readily able to detect any variation from the normal and to recognize in a measure the cause; and, if not able to recognize the cause, in many cases it is possible to withdraw the offending food and thus place the patient suffering from incomplete digestion of starch, fats, meats or other foods, on a suitable diet, one which in a digestion of lowered vitality, is an important factor in securing the increase of nutrition necessary to the sustenance of the patient's weight and strength, and in many cases, of life itself. The very simple methods described by Dr. Schmidt are briefly as follows: After collecting a quantity of feces, on the third day after the beginning of the prescribed diet, having made a thorough macroscopic examination, they are, after as little delay as possible, placed in condition for microscopic examination by dilution with distilled water and thorough rubbing in a glass mortar, after which examination can be made with the microscope and the presence or absence of the various food remains investigated. By the examination of stomach contents we can prescribe a diet which will be suitable to the condition of stomach secretions but we are not sure that the intestinal secretions are normal and will properly care for the food after it leaves the stomach. For instance, it can be determined by a careful examination of the feces whether the connective tissue of meat is being broken up by the pepsin of the gastric juice, as we know pepsin is sometimes deficient in the presence of large quantities of hydrochloric acid. Any diet prescribed in which we rely upon the action of the intestinal secretions to digest the food, we can not be sure is free from indigestible substances, unless we examine the feces and thus demonstrate the ability of the intestinal juices to properly perform their work. It should be a matter of routine to examine the feces of all patients suffering from disturbances of the gastrointestinal tract. This would be found of great value in constructing a diet which could be assimilated without disturbing the digestion; that is, by the elimination of the offending and indigestible foods we do not disturb or interfere with the digestion of the food that the stomach and intestines are able to digest properly. There are certain articles of diet which are at times tolerated and produce no apparent symptoms of disturbance of the stomach or intestines, neither gas, pain, nor other uncomfortable feeling, and, notwithstanding all this, they are not prepared for assimilation in any way by their contact with the secretions of the alimentary tract. These foods can be discovered by the examination of feces, and the clinical importance of being able to supply to the patient only foods suitable to his gastric and intestinal state is such that we are benefited not a little by the knowledge gained through examination of fecal matter. The detail of the procedures I have not attempted to describe, but the methods of Dr. Schmidt (The Test Diet in Intestinal Diseases by Dr. Adolph Schmidt and Dr. Charles D. Aaron, F. A. Davis and Company) are simple and will, I am sure, prove very satisfactory to any one who will carefully follow this line of examination.

DISCUSSION.

ON PAPERS OF DRS. DICKINSON, LICHTY, JUMP AND HILL, GILBRIDE AND JONES.

Dr. H. D. Beyea, Philadelphia: My experience in the treatment of gastroptosis has been directly opposite to that of the internist. I have never seen a case with very marked symptoms in which any form of medical or mechanical treatment did any good. The use of a bandage has been proven by the experiments of Drs. Sailer and Worden to be of little value. By the use of the bismuth emulsion and the x-ray it has been shown that the stomach does not change its position. Treatment: the bandage seems to do good only by increasing the blood pressure. The condition of gastroptosis is now acknowledged to be congenital with the displacement probably increased by conditions later in life. The cause of the symptoms is gastric motor insufficiency. There seems to be an impossibility for the musculature of the stomach to force the food up toward the pylorus. Therefore, the only relief is by surgical methods. In 1898 I did the first operation, suggested by Dr. William Pepper, for gastroptosis. We did not know at that time that any operation had been performed for gastroptosis in the world. The object of the operation was to shorten the gastric phrenic and gastrohepatic ligaments by making a simple fold and applying three rows of stitches. I have operated upon nine cases, the first in 1898. This patient immediately began to gain in weight and has been entirely relieved during the eight years. The other cases with one exception have all done well. This one was markedly neurasthenic, had the lavage habit, had been on the rest cure for a number of months and was scarcely fit for operation. The displacement was subvertical. Following operation she gained ten pounds and her general condition was greatly improved; the neurasthenia had disappeared to some extent. This winter she nursed two sisters with typhoid fever and has lost markedly in weight. She is now neurasthenic, is practicing lavage and washing out the colon several times each day.

The operation is, of course, in the experimental stage, about thirty cases in all having been operated upon. I believe that as time goes on the operation will be more generally practiced. The results have been as satisfactory as the results of any operation I have seen performed in surgery.

Dr. Samuel Wolfe, Philadelphia: The question of diet in these cases is one of great importance and has been emphasized in the papers read. While it is highly desirable to have formulas which correspond with the laboratory findings, and while rapid progress is being made in this direction, the average clinician will be obliged to feed in a somewhat offhand way. It is a good plan to have a patient bring us a record of what he has eaten in a few days or a week at each of the meals and at other times; also of what he has taken in the way of drink, and how many cigars, pipes or cigarettes. These form a record from which we can come to some conclusions. We should not have a patient become introspective, but at the end of a certain period we may be able to cut out some things and substitute a fairly rational diet on which the patient will do well and in addition regulate the life and hygiene of the patient. A good routine treatment after the diet has been properly regulated is a small dose of subnitrate of bismuth with sodium salicylate, about two and a half grains of each, in capsule, immediately after meals, and one and a half hours later dilute hydrochloric acid in fifteen to twenty minim doses. In my own cases, except for symptomatic relief, I have not perceived any great value from any of the alkalies. The subnitrate of bismuth in these small doses is not constipating and the effect of the hydrochloric acid is antiseptic. We possibly thus prevent the excessive secretion of acid which occurs as the result of irritation from septic material present.

Dr. Rudolph Myers, Huntingdon: Personally I have been troubled with acidity for years. Sometime ago I began to carry soda mints about with me taking one or two if suffering from hyperacidity. At the present time my acidity is all gone. I can eat sauerkraut, pies and scrapple, anything at all without any bad effect.

Dr. Dickinson, closing: There is no question in my mind that ulcer of the pylorus has been diagnosed as cancer many times. I recall a case seen many years ago in which the man suffered from hemorrhage and of stagnation of food. I put him under treatment of the alkalies and nitrate of silver and he made a good recovery. Another case of mine was diagnosed as cancer by one of the best surgeons in the country and was operated upon by him, a gastroenterostomy being performed. That was three years ago and the man is alive to-day. That case was unquestionably ulcer of the pylorus.

Dr. Lichty, closing: I believe it is highly important to remove an ulcer when gastroenterostomy is done or when the abdomen is opened for any purpose and the scar is found in the stomach. It is dangerous to leave an ulcer in the stomach for it acts as a nidus for infection. I saw an ulcer removed in Dr. Mayo's clinic which seemed to be perfectly harmless. After removal there was found a small cancer not larger than a split pea. Had the ulcer not been removed the person would have developed the symptoms of cancer within a year and would have passed by the stage of relief.

While the surgeons are pushing the internist to make an early diagnosis, I feel that we, on the other hand, can insist upon the surgeons reducing the mortality of these operations.

I do not believe with Dr. Jump that the pain which comes two hours after meals is always a symptom of hyperchlorhydria. I believe that a duodenal ulcer will give the same symptoms. Several times I have seen the abdomen opened when the symptoms of hyperchlorhydria were present and an ulcer was found in the duodenum. I believe that the cases of hyperchlorhydria which are obstinate and do not yield to diet or treatment in six weeks to two months will show duodenal ulcer.

I do not make a diagnosis of gastroptosis unless I find the fundus of the stomach below the costal margin. If the pylorus only is down, there is very likely a pathological lesion of the pylorus and the condition is not gastroptosis.

Dr. Jump, closing: I want to take exception to Dr. Gilbride's observation upon the use of the abdominal binder. The use of the binder, particularly with the pad which is placed over the fundus is productive of a great deal of pelvic disturbance because of backward pressure upon the enlarged uterus. If the patient is kept in bed sufficiently long to give the abdominal muscles a chance to return to their normal tone there is no use for a binder; most of the time, when it is used, it does not stay around the abdomen, but slips up under the breasts. The use of adhesive plaster in those cases of ptosis, in which we are uncertain of the result of mechanical means, is of value. For many of the dispensary patients too poor to pay for the binder, we order the cheap straight front corset. These are buckled first at the bottom, and the patient is instructed to pull up the abdominal wall, as much as possible, before fastening the upper buckles. These have been productive of much relief in many cases. A change of scene is good for these patients. It, perhaps, does nothing but relieve the neurasthenic symptoms, but these are sometimes precedent over those due to lack of stomach drainage.

In the surgical treatment of these cases I feel that Dr. Beyea has conferred a very great boon upon the medical profession. In the cases he has operated upon, the operation has been justifiable. But in no instance does any one seem justified in having his cases operated upon until he has given the medical side of the treatment a thorough trial. But I believe there is a certain number of these cases, treated with the rest cure and all sorts of nutritive treatment without avail, which have gotten to the point where they must be operated upon.

In regard to Dr. Wolf's treatment of hyperchlorhydria, I can see no justification of the use of hydrochloric acid after the meals, when you have already a superabundance of the acid present. Try it on some case in which the hydrochloric acid is about 100 and see how quickly the stomach will resent such treatment.

Dr. Gilbride, closing: In reference to the use of the abdominal binder, it is assumed, of course, that the binder is properly applied, as all other remedial agents should be. I believe it assists the abdominal muscles in regaining their tone. We know that a large proportion of confinement cases are not in a position to remain in bed for several weeks, and many of those patients get up, contrary to advice, at the end of a week or ten days I think the binder is of value if properly applied, and it is the duty of the attending physician to see that it is not applied with a large pad pressing the abdominal organs downward.

In cases of intermittent hyperchlorhydria I have seen large doses of bismuth of great benefit. The patients showing neurasthenic and hypersensitive symptoms must, of course, be treated for their neurasthenic condition.

Dr. Jones, closing: I want to say concerning the diet in hyperchlorhydria, as referred to by Dr. Jump, that it has been my practice to use as much milk in the diet as the patient can take. This has been suggested by the experiments of Pawlow showing that milk will induce a very small amount of gastric secretion, especially if taken between meals. Beef is known to cause secretion of gastric juice and acts as a stimulant to the secretion of hydrochloric acid, while milk causes the secretion of the smallest amount of the acid of any food which will take up a considerable quantity of hydrochloric acid. In seven cases of hyperchlorhydria under my care within the last year and a half, the symptoms cleared up with the proper refraction of glasses for the farsighted astigmatism which was present. In one case in which tenderness over the epigastrium had disappeared under rest and liquid diet, the patient continused to have considerable pain and vomiting and hydrochloric acid continued in excess in the gastric juice; the vomiting and pain stopped immediately upon dropping homatropin in the eyes and, after the correction of the existing farsighted astigmatism, the patient entirely recovered from the distressing symptoms and the stomach contents have remained normal since that time. In reference to Dr. Gilbride's paper, in some twenty cases I have used the straight front corset as spoken of by Dr. Jump. I have had them made to order, having the goods of the corset extending about an inch below the stays and going straight across the lower part on a line with Poupart's ligament. The corset is put on while the patient is lying down with the feet drawn up and the hips elevated off the bed. The corset is laced with two strings; one beginning below the waist line which is drawn very tight, and the other beginning at the waist line and left very loose, producing no pressure over the epigastrium. My results in these cases have been very satisfactory and the straight front corset has proven in my hands to be a better support than the ordinary abdominal binder for women, because we have the corset held in place by the stocking supporter which can not be done with the abdominal binder.

THE VALUE AND SAFETY OF SURGICAL EXPLORATION IN THE ABDOMINAL COMPLICATIONS OF TYPHOID FEVER.

BY JOHN B. ROBERTS, M. D.,
Professor of Surgery in the Philadelphia Polyclinic, Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It is now a surgical axiom that intestinal perforation, from ulceration in typhoid fever, should be treated by immediate abdominal section and effective restitution of the integrity of the intestinal tube. The difficulty of making a correct diagnosis of perforation is the cause of the surgeon's chief anxiety.

I have become convinced that experience will show that, even in doubtful cases, exploratory incision is wiser than expectant treatment. It has been quite well established that typhoid fever patients bear ether anesthesia satisfactorily. In fact, local anesthesia by means of infiltration of the tissues with a weak cocain and morphin solution will be sufficient in many patients requiring the abdomen opened for exploration.

Clinical experience has shown that a fatal issue is not due to the operation but to peritonitis resulting from the extravasation of intestinal contents. Many recoveries after operative treatment promptly undertaken and the innocuousness of the exploration, in cases where the suspected perforation was absent, prove that little danger exists in the aseptic investigation of the abdomen. The chagrin of having unnecessarily opened a typhoid abdomen is disagreeable; but far less so than the revelation at autopsy that life could doubtless have been saved by prompt repair of a minute intestinal perforation.

The experience gained from operative management of intestinal rupture in enteric fever has taught surgeons the safety of exploration as well as the great value, as a life-saving measure, of instant mechanical repair of the leaking intestinal canal. Surgical investigation of the abdomen has also proved the occasional existence of abdominal complications other than perforation of the bowel, which demand direct surgical treatment.

Perforative appendicitis, intussusception, volvulus, perforative cholecystitis, hepatic abscess, suppurating mesenteric lymph nodes, suppurative iliac thrombophlebitis, ruptured ectopic pregnancy, perforating gastric ulcer, acute ovarian abscess, acute salpingitis, softened infarcts of the spleen, strangulation of a Meckel's diverticulum, obstruction of the bowel from adhesions, Meckel's diverticulum, tumor or calculi, and stricture of the intestine, from former ulceration, are complications that may occur as complications or coincidents during the course of typhoid fever. Many, if not every one, of these surgical conditions have been seen in operative exploration of the abdomen during typhoid fever. It will be admitted by most surgeons and physicians that surgical treatment is demanded in nearly all of them at some period of their existence. The question that arises is, therefore, as to the propriety of adopting surgical measures during the existence of typhoid fever. If the diagnosis of perforation, volvulus, or obstruction of the bowel were clearly established in a given patient, there would seldom be hesitation in operating. The same certainty, as to the existence of the other complications mentioned above, would lead most surgeons to undertake operative treatment.

These complicating lesions have many common symptoms, which render a definite differential diagnosis often impossible. Hence it is my belief that when a patient with typhoid fever presents symptoms of grave intraäbdominal lesion, it will usually be better to make an incision into the belly and inspect the viscera.

DISCUSSION.

Dr. Edward H. Small, Pittsburg: I would like to relate briefly a case that occurred recently in my service in the South Side Hospital at Pittsburg. The patient, a Jewess, aged seventeen years, was brought into the hospital about three months ago, where she had a light attack of typhoid fever. After her temperature had been normal for six days and she was convalescent, she developed a severe pain in the right hypochondrium, which she located in the region of the gall bladder, the pain radiating backward to the spine. She vomited greatly, the matter ejected being bile-stained. I thought I could outline the gall bladder extending two inches below the ribs. Of course the diagnosis was cholecystitis. When an operation was proposed, she and her friends would not give their consent for two days. Dr. E. S. Montgomery of the hospital staff operated, intending to drain the gall bladder. He found it in such a condition that its removal was necessary. It was four and a half inches in length and very tense. The end farthest from the liver was very soft and several dark spots could be seen on its surface. It probably would have ruptured in twenty-four hours or less. The patient made a good recovery. An operation after rupture could have been done, but the chances of a good recovery would have been greatly lessened.

Dr. William L. Rodman, Philadelphia: The importance of Dr. Roberts' paper is too great to allow it to pass by without discussion. He has taken such safe surgical grounds on the subject of treating typhoid fever, and has made his points so well that it only remains for us to emphasize them. My own experience in the surgical treatment of typhoid fever has been rather limited, but it has been sufficient to justify me in the belief that the statement Dr. Roberts made, that typhoid patients bear operation well, is true. Of the four operations I have performed in typhoid cases, three of the patients recovered. One of these cases I reported at the Philadelphia meeting in 1901. It was a large perforation and the operation was performed thirty-seven hours after rupture. Two were severe cases of appendicitis, one with and one without pus. The fourth case undoubtedly was one of hemorrhage. The operation was performed at the instance of two medical colleagues who insisted that perforation had occurred. I did not believe that perforation had taken place but was pronounced in my opinion, and so stated, that it was hemorrhage. At the same time one can not be certain, and I believe as Dr. Roberts says, when in doubt it is better to operate. We found a large hemorrhage but could not find any perforation. The operation was done under a local anesthetic and the patient stood the operation well, but died five days afterward from a second hemorrhage. At autopsy there was no perforation discovered.

As to spontaneous repair, while undoubtedly it does occur in about five per cent. of the cases, I do not think any one is justified in taking the slim chances offered by nature, where the symptoms point clearly and definitely to perforations of the intestines. Surgery, if resorted to promptly, saves at least twenty-five, probably thirty-three per cent.

Dr. George W. Guthrie, Wilkes-Barre: The case which I will report is not exactly germane to the subject of perforation in typhoid fever, but supports the statement that patients convalescing from typhoid fever bear operations well.

The case was one of the cholecystitis, very similar to the one reported by Dr. Small. The patient, in the fourth week, I think it was, showed marked symptoms of cholecystitis; tenderness and soreness in the region of the gall bladder.

He was a patient of Dr. Matlack who performed the operation, and I was in consultation and assisted in the operation of cholecystotomy. The gall bladder was found to be in almost precisely the condition Dr. Small reported. He had great difficulty in preventing tearing and in securing it to the abdominal wall. The patient bore the operation well and made a perfect recovery and is well to-day.

To bear out the diagnosis that it was typhoid fever and that the cholecystitis was merely a complication, his wife, who was one of his nurses, was taken with typhoid fever, had hemorrhage from the bowels, was very ill, and also recovered.

Dr. John H. Jopson, Philadelphia: While I think most of us are disposed to agree with Dr. Roberts in his dictum that patients with typhoid fever, in whom surgical complications develop, should be operated on, where there is a reasonable hope of securing benefit from the operation, there is one point that I should like to call attention to; that is, in regard to appendicitis accompanying typhoid fever. My attention was directed to this matter while making a report of a case of acute gangrenous appendicitis, occurring as a complication of typhoid fever. The course was as rapid as in cases of perforation, and the patient recovered after operation. At that time, I found that quite a number of authors had taken a very strong position against operating on appendicitis in typhoid fever, unless there were strong grounds for believing that suppuration or perforation had occurred. Kelly and Murphy both take the stand that, unless pus or perforation is present, operation should not be done at that time. Dr. Deaver takes the same ground, and it has been pointed out that even a trivial operation on typhoid patients may sometimes be accompanied with serious complications. While the abdominal operation is well borne, the mortality is much higher than in cases of the operation done at some other time. Therefore, in these cases of typhoid fever complicated in the early stages by mild appendicitis, I think it is better to postpone the operation, if possible, than to perform it at this time. Unless there is very distinct evidence of perforation or impending perforation, it is very much better to wait until the patient is well over his typhoid, and then remove the appendix.

Dr. L. Jay Hammond, Philadelphia: This is a subject of great importance, and one too, where much can be done in a prophylactic way. I have elsewhere endeavored to emphasize the importance of a careful study of the early symptoms of typhoid fever in their bearings upon serious complications later in the disease. From a large number of autopsies made on subjects dying from causes other than appendicitis, it has been demonstrated beyond a doubt that the evidence of present or past appendicitis, as shown by more or less extensive bowel adhesions about the region of the appendix, is commonly found. That these adhesions are directly responsible for perforations during the course of typhoid fever has been clearly demonstrated, to my own mind at least, in cases that I have already reported.

It may be put down, I think, as an axiom, that,where pain exists in the iliac fossa among the earliest symptoms of typhoid fever, there will almost certainly be found adhesions due to either past or present disease of the appendix, as it is well known that early in this disease, when no such complication exists, pain is not a classic symptom and should not be found in this region until after the disease has advanced to the stage where the infected products have been deposited in the glands of the intestines. Prompt operative treatment in this class of cases would almost surely remove the dangers of perforation later in the disease.

Dr. Roberts, closing: I brought the subject forward particularly because I wanted to insist that there are many conditions in the abdomen occurring in typhoid fever, which simulate perforation, but are not perforation; yet which demand operative treatment. I was particularly interested in hearing what Dr. Hammond had to say. I know something of his previous writings on this subject, and it seems to me they have a direct bearing upon this topic. Dr. Jopson called attention to the fact that Kelly and Deaver and Richardson (all of whom are men to whom I look for instruction, and from whom I have learned much) have called attention to the danger of operative treatment for appendicitis occurring in typhoid fever, and discourage such operations. I am inclined to think that would usually, though not always, be my stand. In some cases of typhoid fever, there are symptoms which we think resemble perforation; they may or may not be perforation; they may or may not be appendicitis. They should be explored. When one finds a severe pain in the typhoid belly, the cause of which we can not certainly discover, my feeling is that we should open the abdomen. The typhoid patient bears local anesthesia very well, and also bears general anesthesia very well.

THE VALUE OF SKIAGRAPHY IN THE SURGERY OF THE NOSE.

BY W. G. B. HARLAND, M. D.,
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AND H. K. PANCOAST, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

This paper is based upon a series of skiagraphs of patients at the Hospital of the University of Pennsylvania taken during the last year and a half. Some of the cases were under the care of Professors Frazier and Grayson, by whose kind permission we are able to report them.

Skiagraphs are undoubtedly of considerable value to the rhinologist in giving a definite idea of the shape, size and location of the accessory sinuses, and in indicating the presence or absence of serious pathological changes. By means of the *x*-ray picture we can determine, for instance, whether or not a sound has entered a frontal sinus, or can assure ourselves that we are not dealing with a case of rudimentary or absent frontal or maxillary sinus. We can estimate the depth and extent of the frontal sinuses, a matter of considerable importance in operative cases; even the septa of the frontal sinus can at times be distinguished, though one must beware of taking the white suture line of the frontal bone for the main septum.

As to information concerning pathological changes much can be learned from skiagraphs. Usually the clouding of a cell in the picture will be found to be due to a thickened mucosa, to pus, or to both. That pus alone can produce a change in the picture has been proved to our satisfaction by a picture of a frontal sinus taken after pus had been drawn off through the nose. This plate shows the sinus clear, whereas a picture taken before the sinus was drained, showed the sinus blurred. Of course gross neoplasms and foreign bodies will always show plainly in the skiagraph.

A clear, clean-cut picture of a sinus affords good evidence of its freedom from serious diseases, and in a number of cases we were able by this means to exclude with certainty the presence of involvement in cases referred for an opinion as to the possibility of accessory sinus disease. In other cases, in which a number of cells were diseased, we were enabled to learn which sinuses had escaped infection.

Although probably more definite information can be obtained from the x-ray pictures than from the lights and shadows of transillumination, this method is nevertheless open to some of the sources of error that detract from the value of transillumination, for pictures will be influenced by such factors as thickness of bone, etc. Another difficulty is the fact that cells and

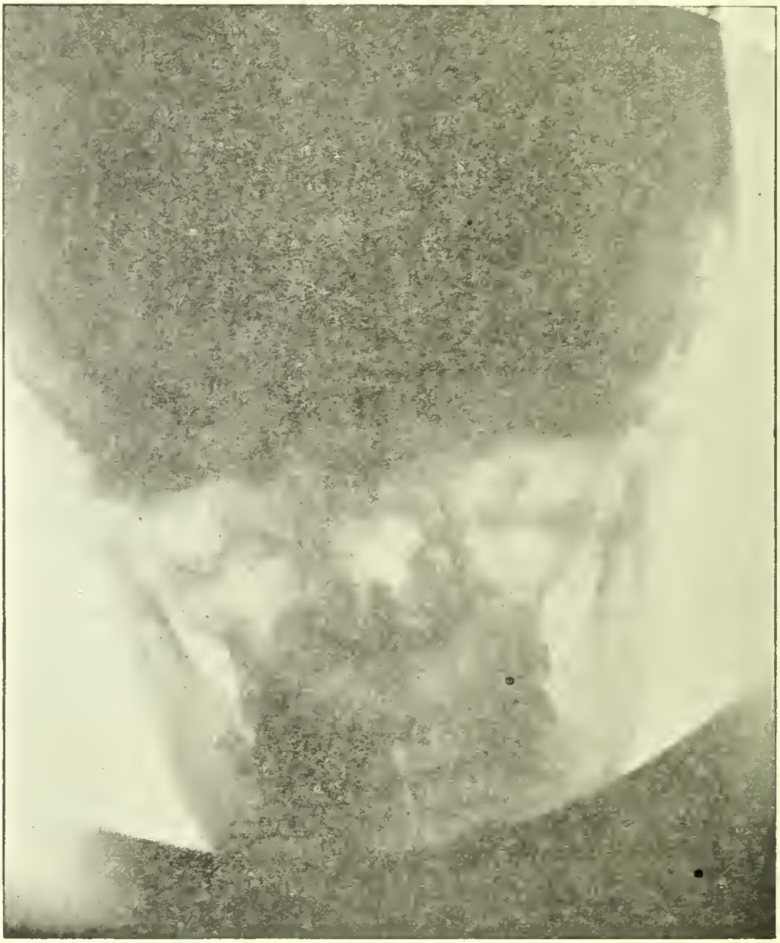


FIG. 1.—Case 5. Maxillary antra are clear. Normal appearing septum proves in skiagraph to have suffered destruction of its bony portion.

sinuses overlie one another in the picture, and this must be allowed for in studying the skiagraphs; usually the cells nearest the plate will appear clearest. Another source of error lies in the faulty development of the plate. Because of these possibilites it is evident that the skiagraph will prove most useful when studied in connection with a careful examination of the sinuses by all other possible means at our command.

Technic. The secret of success in this work lies in the employment of a hard tube and a diaphragm with plenty of current and short exposure, also much depends upon careful development of the plate.

For lateral views the plate is held on the diseased side of the head. In the pictures I shall show the tube was held at a distance of about eighteen inches, exposure lasting 28 to 33 seconds, and 32 to 47 ampères of current being used.

For antero-posterior views the plate is held in front and close to the face, the patient lying on the abdomen. The clothing is removed from the neck and the tube is held below the occipital protuberance. In our first pictures, some of which will be shown, the tube was held at a distance of from 16 to 18 inches, exposure lasting 30 to 45 seconds, current from 34 to 50 ampères. Lately the exposure has been lessened to 10 to 20 seconds, and the current increased to 60 ampères of the primary.

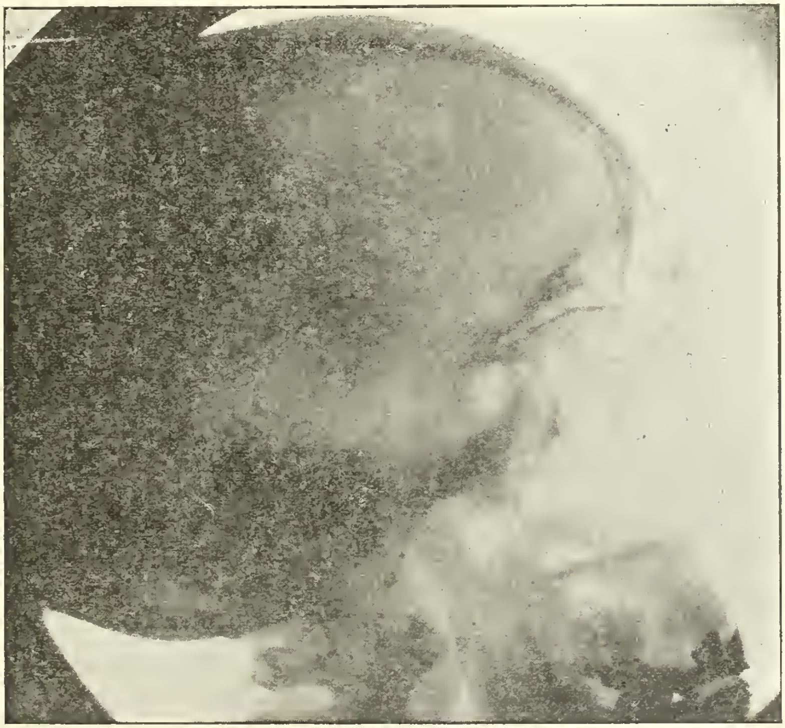


FIG. 2.—Case 10. Antra, ethmoidal cells, frontal and sphenoidal sinuses are well defined and are clear of disease. Sarcomatous mass in nasopharynx and base of brain shows well.

The following skiagraphs and case histories illustrate the possibilities of the x-ray in rhinologic practice.

ANTERO-POSTERIOR SKIAGRAPHS.

1. P. C. Case of neurasthenia with head pains. Skiagraph shows sinuses clear.

2. C. B. Purulent ethmoiditis with polyps. Skiagraph shows antra free from disease. Operation: curetment.

3. J. J. W. Typical empyema of right

antrum. Skiagraph shows frontal sinus clear, some clouding of ethmoid cells.

4. G. R. Skiagraph shows that probe introduced through the nose had actually reached frontal sinus.

5. M. W. Case with polyps with marked gastric disturbance. Skiagraph showed normal appearing septum to have suffered destruction of its bony part, and led to diagnosis of congenital syphilis. Under potassium iodid and local treatment patient improved very satisfactorily (Fig. 1).

6. C. W. Case pansinuitis. Operation: curetment of ethmoidal labyrinth, radical antrum. Skiagraph shows nasal fossa clear.

7. W. McC. Sarcoma of nasopharynx with metastasis to side of neck and into base of brain. Frontal sinus and left antrum clear. Blurred area corresponds to tumor mass. Notice false teeth. Operation: carotids ligated; section of sensory root of Gasserian ganglion.

8. I. D. Carcinoma inner wall right antrum. Skiagraph shows outer part of antrum clear. Operation: resection superior maxilla. Specimen shows accuracy of skiagraph.

LATERAL SKIAGRAPHS.

9. A. McG. Old case antral empyema. Skiagraph shows large frontal and sphenoidal sinuses. Operation: drained through alveolus.

10. W. McC. (same as 7). Skiagraph shows large frontal sinus and outlines of ethmoid cells and sphenoid. Also tumor mass at base of brain (Fig. 2).

DISCUSSION.

Dr. Walter B. Weidler, Lancaster: I should like to ask Dr. Harland whether, when it is suspected or thought that there is pus in these sinuses, he always finds such signs that, when he opens it, he may be sure of the presence of pus; or, just as in transillumination, pus may be suspected and not found when the cells have been opened. Has he made out a table of percentage failures in such cases?

Dr. Howard F. Pyfer, Norristown: In suspected sinus conditions, the same rules of watchfulness and care should be observed as though no skiagraph had been taken. The picture is very valuable and suggestive, but the darkening of the cells may mean only some error in the technic. No one should think of operating, nor should he recommend operation, merely from the skiagraph; it certainly would be very mortifying, to say the least, to find nothing there to warrant surgical procedure except a dark shadow in the picture and a suspected neuralgia.

Dr. G. Hudson-Makuen, Philadelphia: We all welcome any additional methods of arriving at a correct diagnosis in sinus affections. I have been impressed with the difficulties of such skiagraphic work as Dr. Harland has brought before us. Only long practice can produce such excellent results.

I have seen considerable of the work done by Dr. Coakley and his associates, who have probably carried it further than any one else. They show pictures of a great variety of cases, which, together with Dr. Harland's, would seem to demonstrate the great diagnostic value of the procedure.

It must require very great technical skill and a great deal of practice to make these plates, and one should have some knowledge, also, of the anatomy and physiology of the parts to be successful. Dr. Harland is to be commended for bringing the matter before the section.

Dr. Chevalier Jackson, Pittsburg: I have had no personal experience in this line of work. These plates and those of Dr. Coakley show that it is possible to so perfect the work that we shall have a most valuable aid to diagnosis.

Dr. Samuel D. Risley, Philadelphia: I have been very much encouraged by looking over the plates. Two or three of them would, I think, have proved of great aid in a number of cases that have come under my own observation. In these cases there was sinus disease associated with proptosis of the eyeball; and in two striking instances there was apparently no obvious reason for suspecting frontal sinus disease. The eyeball was pushed very far forward; the patients were suffering violent pain; there was optic neuritis; vision was down to one fifth. After amputating the middle turbinals, I was able to introduce a probe into the frontal sinus, which was followed by discharge of pus. I then opened the frontal sinus under the orbital rim. Before I had proceeded many steps, the instrument went through the floor, which I found soft and honeycombed with necrosis, there being an enormous pus-pocket in the orbit, back of the eyeball. Even after consultation with several colleagues at the hospital, the existence of such a condition had not been suspected. It was only because of the state of the middle turbinate that I was led to suspect its presence. In amputating that, I discovered the other condition. A skiagraph such as two of these, interpreted with the skill of Dr. Harland, would have been of great advantage from a diagnostic point of view.

Dr. Harland, closing: These pictures are of only corroborative assistance. In most cases, we can make a diagnosis without their aid. It, however, makes us feel much more sure to have our findings in black and white.

There may be frontal sinus trouble with pus, and it will not show in the skiagraph unless the pus is present at the time of taking the picture.

The trouble with Dr. Coakley is that he has not told us how he makes his pictures and we have had to work around trying to find it out; we show the way we make ours. Any one using our plan can make pictures as good as ours, if not better.

The case of carcinoma is a very striking example. The picture shows the dividing line clearly. It is in the class of cases in which one is not quite sure of the diagnosis that these pictures are of most value. No one would dare to do an operation on the strength of the skiagraph alone; but, to my mind, it is far ahead of transillumination in value. It is more definite and can be studied more carefully, and the personal equation does not enter into it. From the negative point of view, it is more valuable than from the positive. If one gets a clear picture, one is sure that there is no disease. It is a great comfort to see by the skiagraph whether the frontal sinus is free from disease; and the picture will also show the extent of the disease, if present.

THE STRENUOUS LIFE.

S. T. Rucker, Memphis, Tenn. (*Journal A. M. A.*, June 16), states that he is not opposed to the strenuous life when it is safeguarded by proper diversion and sufficient rest, but he condemns the present high pressure system of education and the conditions of the average business and professional lives. He emphasizes the need for leisure and calls attention to the increase in mental diseases. Nervous breakdown, he states, has been called our national disease. He mentions the number of deaths from heart disease, and the prevalence of arteriosclerosis, a disease largely due to nervous strain and hyperarterial tension.

THE RELATION OF THE LYMPH GLANDS OF THE MEDIASTINUM TO DISEASE AND THEIR VALUE IN EARLY DIAGNOSIS.

BY WILLIAM S. NEWCOMET, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

As so much depends upon the early recognition of chest diseases, all possible means should be employed to ascertain the precise condition so the patient can be put under the proper régime before the process has extended to such proportions that more radical methods must be employed, much to the individual's discomfort and perhaps even where his livelihood may be greatly if not wholly endangered.

There are some in our profession who rather discourage any thing new, and while the multiplication of different methods of diagnosis may, under some circumstances, be confusing, yet at the same time, if they tend toward exactness, they must be tolerated.

For several years careful study has been made of the human chest by different workers in this field under greatly varying circumstances with the idea of developing new signs that will be of service in early diagnosis, and some, such as William's sign, have now become standard.

The need of methods for the exact study of the chest is well illustrated alone in the cases of tuberculous disease of the lungs, due to its invasion being so polyphased, not to mention its course after degeneration has taken place; and, while comparing the different pictures made from sufferers of this disease as they presented themselves for examination, it occurred that the bronchial glands would at times be a most prominent feature. Then upon looking up this subject in recent medical literature one is struck by the slight amount of attention it has received, although a half century ago whole volumes were devoted to this subject. Methods were outlined for ascertaining the precise condition of these glands in certain diseases, but it is obvious that either these older practitioners possessed more skill than those of to-day or else their methods were more or less inaccurate, otherwise they would have met with more popular favor and their use continued. However, there was some truth in these writings, for in all infections throughout the body the lymphatic system is always prominent; then why not in the chest? A small hang-nail or a blistered toe will cause the glands along the contiguous chain to enlarge. Then upon the same reasoning why should it not be so in inflammatory processes of the chest. Some believe that it is the bronchial glands that first become infected, and in certain cases this appears to be true, particularly in the glandular type. Cases have been reported where the enlargement of these glands causes the formation of a tumor, giving rise to asthma from obstruction that it causes in the air passages. To be sure such cases can be easily mapped out by the ordinary methods of percussion, etc. On the other hand there are cases of incipient tuberculous infection where the disease is only evident in the root of the lung and none of the ordinary physical signs will be detected, and such processes no doubt in many instances are regarded as irregular cases of typhoid, malaria, etc. Were they more carefully examined it would be found that there is often evidence of deep seated trouble of tuberculous nature. These irregular fever cases that do not show decided signs should be most carefully studied for they are the consumptives of ten years hence.

A few cases that illustrate these facts are seen in the radiographs.

In these pictures the tuberculous processes are easily seen, yet the physical signs at that time were negative; although they had fever, the symptoms were not those of pulmonary disease.

While it is possible to detect pulmonary disease at its incipiency, yet, on account of the widely different picture, these cases of tuberculous nature present mistakes which will happen if the observer is not exceedingly cautious. The history of the following case given me by Dr. James Rea Crawford illustrates this point.

V. B., male, eighteen years old, single, works in a store. Family history was good. June 4, 1905: Previous history gave ordinary infections but no serious illness. Present illness began about two weeks previously with headache, lack of appetite, tired, nervous and draggy condition in the mornings, some disturbance of vision, no cough, possible loss of weight, knee jerk and station normal but the patient was apprehensive about his condition; temperature, 99⅔ degrees.

June 7: Symptoms were about the same; examination of the lungs showed a slight impairment of resonance and fine râles over the whole right lung.

June 9: Examination of urine showed a few hyaline casts, otherwise negative. Temperature ranges from 99 to 101⅗ degrees. A skiagraph by Dr. Newcomet shows scattered areas of consolidation over both lungs and the bronchial lymph glands all seemingly enlarged.

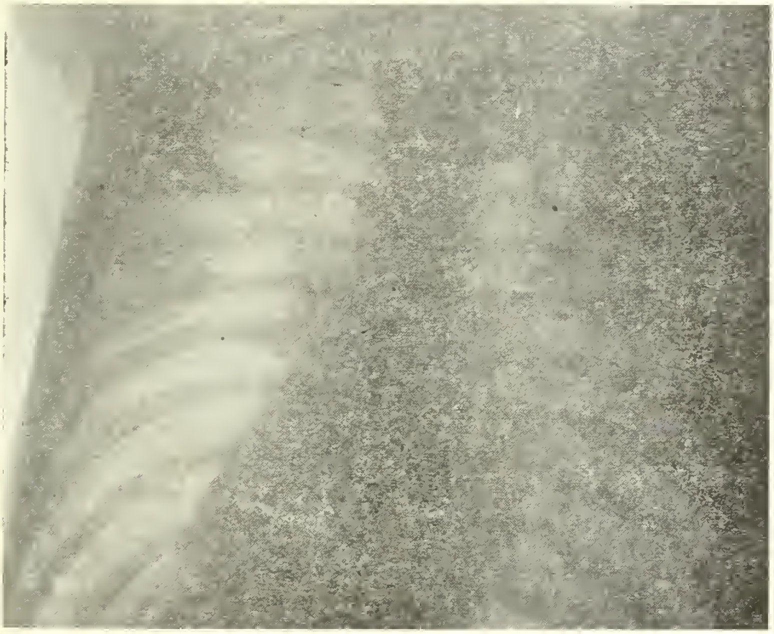
June 12: After feeling improved for several days he was suddenly taken with pains in the wrist, elbow and ankle joints; they were swollen, and skin of his hands and feet was a peculiar yellow color that would stain the water in which he bathed. Urine contained a trace of albumin, hyaline casts and considerable uric acid. Temperature was 103⅗ degrees; blood examination showed hemoglobin, 60 per cent., leukocytes, 40,000; Widal reaction, negative. Spleen was slightly enlarged. Under salicylates the temperature fell to normal and symptoms improved generally.

June 18: Temperature suddenly rose to 104⅗ degrees, accompanied with pain and swelling of the joints, some bleeding of the gums, petechial hemorrhages of the legs and arms; face was swollen and pallid. The spleen was easily palpable, extending two finger breadths below the ribs and forward to axillary line. All the superficial lymph glands were enlarged but freely movable and not painful. The blood examination was as follows; hemoglobin, 42 per cent.; red cells, 1,840,000; leukocytes, 72,000; polymorphonuclear, 1.2 per cent.; lymphocytes, 98.4 per cent.; large mononuclear, 0.4 per cent.

July 5: Eye examination showed a hemorrhage into the left retina. By July 15, the red cells of the blood were as low as 1,006,000; on the other hand the leukocytes were 160,000; hemoglobin, 15 per cent.

July 23: Patient became comatose and died. Duration of the disease was about seven weeks. Diagnosis, acute leukemia.

It will be noticed that the first mention made of enlarged glands in this case was from his *x*-ray examination, yet from the picture alone we could not decide whether the case was one of acute leukemia or miliary tuberculosis. The question now arises, do the internal glands in all cases of leukemia enlarge first? If they do, then an *x*-ray examination with a blood count will establish a method for the early diagnosis of this most fatal disease. Syphilis and cancer are two other diseases, where the lymph glands of the chest are a decided factor, but they do not concern us except to the degree that under some circumstances might promote confusion. In most cases of cancer the glands usually produce a decided tumor, and these glands are not liable to be disseminated, while in syphilis the regularity of the enlarged glands, particularly in the posterior mediastinum, will aid toward its exclusion.



Case of acute leukemia, showing enlargement of the lymph glands, particularly along the ramification of the bronchi.

In some of the older text-books upon this subject we find the glands of the chest divided into the following groups: The right and left mediastinal, the right and left peribronchial, the subbronchial and the interbronchial. At the same time the author states that any or all of these different groups are liable to inflammatory processes. The above grouping of these glands is not to be found in the modern books on anatomy, therefore we must look upon this division of the lymphatic system as rather arbitrary, and evidently more from a clinical than from an anatomical standpoint. At the same time it goes to prove that over a half century ago these glands were recognized and considerable weight given to their diagnostic value.

In conclusion it might be emphasized that, if these glands are properly studied, particularly in the early cases, they will aid materially towards a proper solution as to the nature and extent of existing disease in the chest cavity.

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Bouchut, *Zur Diagnose der Bronchial drusen tuberkulose.*

Krumbholtz, *Zur Diagnose der Bronchial drusen tuberkulose.*

DISCUSSION.

Dr. Lawrence Litchfield, Pittsburg: I would like to ask Dr. Newcomet whether he can say that in cases of enlarged bronchial glands there will be, as a rule, some of the glands in position to be shown by the radiograph; or if there might not be a considerable number of glands enlarged and yet all be obscured by the spine and heart; in other words, if he can be fairly certain that when no enlarged glands are demonstrable by the *x*-ray, enlargement of the mediastinal glands does not exist.

Dr. Newcomet, closing: I have been making a study of these bronchial glands for the last three or four years. At first we worked entirely with the fluoroscope and were able to be tolerably sure of their nature by the fact that they move with respiration just the same as is illustrated in the picture, which you might suppose was a mistake. A short time ago the accuracy of a radiograph was challenged. It was thought that certain shadows in the chest were not correctly interpreted, and in this instance I was able to answer from the postmortem findings. The case was an abscess of the lung, which had much the appearance of an empyema. To be sure, we are not able to correct ourselves in light cases by postmortem.

In regard to Dr. Litchfield's question, when the glands are back of the heart shadow, or larger vessels, they are lost, except in advanced cases of children where the glands are so terribly enlarged that they draw out the shadow from the neck down. Those cases are rather easy to diagnose, and can be done without the aid of the *x*-ray.

THE RECENT EPIDEMIC OF TYPHOID FEVER IN SCRANTON, WITH SPECIAL REFERENCE TO THE DETECTION OF BACILLUS TYPHOSUS IN THE WATER SUPPLIED TO THE CITY.

BY SAMUEL G. DIXON, M. D.,
Commissioner of Health of Pennsylvania.
Ardmore.

Scranton's typhoid record for the earlier half of the year 1906 was a remarkably clean one and the few cases of the disease which occurred could easily be attributed to importation. In the month of August, however, a trifling increase was noticed by the Department of Health in the typhoid returns from that city, and for the next two months there was a constant, though comparatively slight, unusual prevalence of the affection, indicating the presence of some disturbing condition. No alarm was felt, however, by the citizens or the local authorities until December 7, when there was a sudden and startling rise in the number of cases. By the middle of the month it was evident that a serious epidemic was under way. On the 13th, thirty-three cases were reported as having occurred in the last twenty-four hours. There could be no doubt as to the true nature of the disease as a large percentage gave a positive Widal reaction. A medical and an engineer inspector of the department were at once commissioned to visit Scranton, put themselves in communication with the local board of health and other city authorities and endeavor to discover the origin of the outbreak. Our representatives reported that one hundred and thirty cases had occurred in six days and that the fact had developed that all of the cases had been found in a section supplied from one only of the three reservoirs which furnish the city.

The authorities had accordingly taken the precaution to shut off this source known as the Elmhurst Reservoir. The increase in the number of cases was now very rapid, so that by January 5, 1907, it had reached 1010 in the city and eighteen in the adjoining borough of Dunmore, evidently due to the same source.

No antecedent case of fever could be discovered on the watershed. An examination of the water itself, therefore, became of pressing importance and arrangements were made at the Department of Health laboratories by Dr. Herbert Fox, chief of the laboratories, and Dr. D. Rivas, first assistant, for the immediate bacteriological investigation of a large number of samples. The following is in part the report of their work submitted February 1, 1907.

On December 12, there were received from Dr. F. F. Arndt, bacteriologist of the Scranton Board of Health, two samples of water from the reservoir and one sample of sewage.

The sewage was collected on its escape from a hotel in the village of Moscow where it flowed into Roaring Brook, and from that stream into Elmhurst Reservoir. No colon was found in the water samples. That in the sewage of course was of interest simply as showing a possible source of pollution of the reservoir.

From our own inspectors were received December 19, four samples; December 21, fifteen samples; December 29, four samples; January 7, six samples; January 16, twenty-four samples; January 28, three samples; January 31, eight samples; February 1, nine samples; February 4, eight samples; February 7, six samples; February 8, six samples; ninety-three samples in all. These samples were collected from ten reservoirs, one creek, seven brooks, one watering trough, two taps at hotel, two at restaurants and one at the city hall. Those from the reservoirs were taken in different situations and at different depths, and at gate houses, screen chambers and spill ways.

All of them were received from the department's inspectors in glass stoppered bottles, which varied in content from one to five ounces. They were all received in containers and packed well with ice.

The methods of examination used in the determination of bacteria in these samples consisted in plating quantities of one cubic centimeter of the raw water, or in making dilutions when it appeared that the water contained many bacteria. Agar-agar was used entirely, and the plates were incubated at 37 degrees C. for forty-eight hours for the determination of the number of bacteria per cubic centimeter. One cubic centimeter of the raw water was also plated in litmus lactose agar with about one per cent. Parietti's solution and incubated at 37 degrees C. for twenty-four hours, to discover contamination of the bacillus coli. These plates were fished at the end of twenty-four hours and grown in dextrose broth, and those showing fermentation were studied further for the determination of the bacillus coli. After these quantities were removed from the original bottle of raw water, the remainder of the water in each bottle was poured into flasks containing double strength bouillon in about equal quantities, and to this mixture about one per cent. Parietti's solution was added. Unfortunately the water in these bottles was not measured, so we can not report on the exact quantity of water, but as the bottles averaged about three ounces (about equal to 100 cubic centimeters), we have spoken of the bacillus coli content of that quantity. These plates were fished at the end of twenty-four hours, and the routine examination of the bacillus coli made.

Being mindful of the epidemic of typhoid fever in Scranton, we were on the lookout for the bacillus typhosus, and from the plates made of the large bulk of water grown in double strength bouillon, we fished about one hundred colonies which were suggestive of that organism, being small and blue or violet. Of this hundred, four grew diffusely upon dextrose broth without the production of gas, and were accepted as suspicious. These cultures came from (1) number 7 reservoir surface at Spillway, laboratory number, 97-a, (2) brook just below hotel sewer at Moscow, laboratory number, 100, (3) Roaring Brook just below bridge, Mill St., Moscow, laboratory number, 103, (4) Van Brunt Brook just below run leading from Moscow cesspool, 108. (These cultures will hereinafter be mentioned by their laboratory numbers.)

The culture, Lab. No. 97-a, was proven to be identical with the bacillus typhosus, biologically, morphologically and in its serum relations. This culture will be described later on.

The culture, Lab. No. 100, reacted with blood of one patient on two occasions, and was biologically strongly suggestive of bacillus typhosus, except in milk, where the alkalinity ruled out such a determination. Since this time, the organism has not reacted to anything, and has unfortunately been lost by contamination.

The culture from Lab. No. 108 was biologically like the bacillus typhosus, is nonmotile and does not react to any blood.

The culture 103, in many ways suggestive of bacillus typhosus, reacted to three samples of blood from typhoid patients, but does not produce a serum after injection into rabbits which will agglutinate either the bacillus typhosus or culture from Lab. No. 97-a, now to be described.

REPORT OF THE CULTURE FROM LABORATORY NUMBER 97-A.

The following is a report of the bacteriological examination of the culture obtained from the water sent to us labeled "No. 2, Spillway of dam No. 7," in a series of samples sent on December 17, arriving at the laboratory on December 21, 1906. This sample was subjected to the same routine examination as the other samples, according to the method outlined above. On the plates made from the bulk of the water which was incubated with double strength bouillon, about 200 blue colonies were found. Fifteen of the most suspicious of these colonies were transferred to dextrose broth and fermentation tubes. One of these fifteen showed a diffuse, even turbidity with no gas, no excessive growth on the bottom of the bulb, and proved to be a motile organism, negative to the Gram stain. The other fourteen tubes were easily excluded from consideration. This one very suspicious tube was transferred to the various culture media, and the following is a detailed account of its growth.

The organism was negative to Gram stain, stained rather diffusely with Loeffler's, and all stains showed a short, rather plump rod, with rounded ends, sometimes present in filamentous forms. They were actively motile, with a typical wiggle.

On agar slants, there grew a pale, even, smooth, regular veil-like grayish blue streak on the surface.

Agar plates presented small, smooth, even regular, round entire superficial colonies, having bluish gray color by reflected light; in the depth round or whetstone shape, finely granular, yellow brown colonies. Practically the same colonies were present on gelatin, except that they were more finely granular, the radial lines were not clear, and the nuclei were central or slightly eccentric. No liquefaction.

Gelatin tube: after forty-eight hours, there was a pale, whitish growth along the stab, with flat smooth surface growth, showing a little tendency to spread. No liquefaction.

Lactose litmus agar tubes: the medium has a violet color after twenty-four hours, with a slight, smooth, bluish growth on the surface, but no gas and no red color. No gas in lactose litmus bouillon.

Lactose neutral red tube: there is a growth along the stab and along the surface as above. Medium has slightly deeper red color.

Milk: at the end of twenty-four hours, the first change was seen, the medium being slightly violet or lilac, which is more marked at the end of forty-eight hours, but does not increase thereafter. There is at no time any viscidity of the milk.

Potato: (acid) there is a very faint moist colorless growth on this medium.

Bouillon and peptone water: even turbidity, more marked in the former; no pellicle and no indol after a growth of eight days.

Conradi-Drigalski plates: Stroke plates showed small, bluish, round, regular, even and entire colonies, the largest being three millimeters in diameter at the end of forty-eight hours.

His tube: growth along the stab quite clear, extension into the medium very faint. No gas by stirring with the rod.

His plates: the colonies on the surface showed typical granular center, with thready outgrowths.

Serum Tests. On January 2, this culture reacted positively in dilutions of 1-50 and 1-100 with three samples of blood collected from typical typhoid fever patients in the Hospital of the University of Pennsylvania; controls made with the bacillus typhosus made at the same time were found to be positive.

On January 5, we obtained three samples of blood from Dr. F. F. Arndt, bacteriologist of the city of Scranton, and five specimens from new cases from the Hospital of the University of Pennsylvania. From these bloods were obtained five positive reactions with the bacillus typhosus, and with the culture from Lab. No. 97-a. The bloods which were negative to the bacillus typhosus were likewise negative to this culture.

On January 8, these bloods were retried with exactly the same results. This culture was then tried with normal blood, and both it and the bacillus typhosus were negative in dilution of 1-10 and 1-50, even after the lapse of one hour.

Rabbits were immunized with the bacillus typhosus, culture from Lab. No. 97-a and with culture from Lab. No. 103. They were injected with dead cultures and then with minute quantities of live cultures, ten days apart. They received in all three inoculations. Our preliminary agglutination test, set ten days after the second injection, showed that the serum from the rabbit injected with bacillus typhosus agglutinated the homologous organism in dilutions of 1-10 and 1-100, the latter reaction occurring promptly and clearly at the end of twenty minutes. This same serum clumped the culture from Lab. No. 97-a in dilutions of 1-10 and 1-100, the latter reaction being complete and typical at the end of twenty minutes. This antityphoid serum did not react in dilutions of 1-10 and 1-100 with culture from Lab. No. 103.

The animal which had been injected with 97-a was bled at the same time, and the serum agglutinated this culture, that is, 97-a, in dilutions of 1-10 and 1-100, the latter being prompt and positive when observed after twenty minutes. This same serum agglutinated the bacillus typhosus in dilutions of 1-10 and 1-100, the latter reaction being typically positive when observed after twenty minutes.

This serum from the rabbit injected with the culture from Lab. No. 97-a did not clump the culture 103.

The serum from the rabbit injected with culture Lab. No. 103 agglutinated the homologous bacterium in dilutions of 1-10 and 1-100, but had no effect in dilutions above 1-10 upon the culture Lab. No. 97-a, or bacillus typhosus.

The microscopical method of agglutination test was used, and the controls in all cases were free of clumps and actively motile. The time limit of ten minutes was set for dilutions of 1-10 and when dilutions were 1-100, no reaction was considered positive that did not appear within ninety minutes.

Ten days after the third injection, the rabbits were again bled, and on this occasion we determined the limit of agglutination value of each serum for its own culture, and the heterologous bacillus. We determined primarily by the microscopic method, that each serum would react with its own, and with the other organism rapidly in dilutions of 1-400. (See Chart No. 1.) The test for the limit of dilution which would give a positive reaction was set by the macroscopic method, and it was found that the serum from the rabbit injected with the bacillus typhosus would agglutinate that organism in dilutions of 1-6000, while the serum from the rabbit injected with culture 97-a would agglutinate its native bacterium in dilutions of 1-4000, and questionably in dilutions of 1-5000. The limit of agglutination of each serum with the heterologous bacterium was then tried, and it was found that the antityphoid serum would react with the culture from Lab. No. 97-a in the dilution of 1-4000, and that the serum from the rabbit injected with culture Lab. No. 97-a would react with the bacillus typhosus in dilutions of 1-3000.

After having discovered that each serum would agglutinate the homologous and heterologous organisms in high dilutions, it was natural to suppose that the heterologous organism would absorb all or nearly all the agglutinin produced by the homologous organism, and therefore reduce the limit of the dilution value for the latter. The dilutions of the 97-a and bacillus typhosus antisera to which the heterologous organism had been added, to determine the heterologous agglutination limit, were centrifuged to free them of all bacteria. These, then, were respectively the proper dilutions of the typhoid antiserum in which the agglutinin had been absorbed by the culture from Lab. No. 97-a, and of the 97-a antiserum, the agglutinin of which had been absorbed by the bacillus typhosus. Having removed the heterologous bacilli from the absorbed dilutions, very small quantities (1 drop in 2 c.c. dilution) of a thick emulsion made in salt solution from twenty-four hour old agar slants of the respective bacteria, were added to their native sera. (See Chart No. 2.)

It was found by this that the culture 97-a had absorbed sufficient agglutinin from the antityphoid serum to reduce the agglutinin limit of that serum for the bacillus typhosus from 6000 to 100. Controls of the antityphoid serum which had been preserved in dilution (therefore about twenty-four hours old) reacted with the bacillus typhosus positively in dilutions of 1-4000, and questionably in dilutions of 1-5000. It seems, therefore, from this experiment that the culture from Lab. No. 97-a is capable of absorbing nearly all the agglutinin produced in rabbit serum by the bacillus typhosus.

In order to determine whether the bacillus typhosus could absorb the agglutinin produced in rabbit serum by injection of 97-a culture, complimentary tests were set. It was discovered that the 97-a antiserum would clump the bacillus typhosus to the dilution of 1-3000, but when this serum was centrifuged and mixed with its homologous culture, the

SERUM TESTS WITH ANTISERA OF TYPHOSUS AND 97-A SCRANTON CULTURE.

CHART NO 1.

Typhoid serum + bac. typhosus	++	++	15″ +	O	97-a serum, bacillus typhosus	++	++	20″ +	O
Typhoid serum + 97-a	++	++	+	O	97-a serum, 97-a culture	++	++	+	O
Dilution	1-10	1-100	1-400	C		1-10	1-100	1-400	C

Time limit 1-10, 10 minutes; 1-400, 4 hours; 1-100, 90 minutes.

CHART NO. 2.

LIMITS OF AGGLUTINATION WITH HOMOLOGOUS AND HETEROLOGOUS SERA AND ABSORPTION.

A-Typhoid Serum. Rabbit. Dilution.	10	50	100	200	400	600	800	1000	1200	1400	1600	1800	2000	2500	3000	4000	5000	6000	7500	10000	C
Typhoid serum + bacillus typhosus	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	—	—	O
Typhoid serum + 97-a (absorption)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	—	—			O
Typhoid serum + bac. typh. (after absorption)	+	+	+	+	—	—	—	—	—	—	—	—	—	—	—	—	—	—			O
Typh. ser. + bac. typh. (serum 24 hrs. old)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	—			O

B—97-a Serum. Rabbit. Dilution.	10	50	100	200	400	600	800	1000	1200	1400	1600	1800	2000	2500	3000	4000	5000	6000	7500	10000	C
97-a serum + 97-a culture	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	?	—			O
97-a serum + bac. typhosus (absorption)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	—	—	—			O
97-a serum + 97-a (after absorption)	+	+	+	+	—	—	—	—	—	—	—	—	—	—	—	—	—	—			O
97-a serum + 97-a (serum 24 hr. old)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	—	—	—			O

Time limit for all dilutions 16 hours.

CHART NO. 3.

97-A ANTISERUM WITH DIFFERENT CULTURES.

No.	Name.	Dilution.	Result.	Time Limit.	Control.
1	Typhoid	1-500	+	20 min.	Good.
2	97-a	,,	+	20 min.	Fair, few clumps.
3	Flexner	,,	+	20 min.	Good.
4	F-1	,,	+	40 min.	,,
5	F-2	,,	+	20 min.	,,
6	Hunt	,,	+	35 min.	,,
7	Wainwright	,,	+	20 min.	,,
8	264-1	,,	+	35 min.	,,
9	264-2	,,	+	35 min.	,,
10	B. paratyphoid	,,	—	3 hrs.	,,
11	B. paracolon	,,	+	1 hr.	,,
12	103	,,	—	3 1-2 hrs.	,,

agglutinin limit for this culture, that is, 97-a, had been reduced to 1-200. Controls, as before, made from the twenty-four hour old dilutions of 97-a antiserum showed that these dilutions still reacted to the limit of 1-3000, with 97-a culture. It therefore seems that the bacillus typhosus can absorb most of the agglutinin produced in the serum of rabbits by the culture of 97-a.

Time limit of sixteen hours was established for all these macroscopic experiments.

There are in the laboratory, four cultures determined to be the bacillus typhosus, and four cultures suspected of being the same. The serum produced by the injection of culture from Lab. No. 97-a was tried with these eight, and the 97-a culture, with the bacillus paracolon, bacillus paratyphosus, and with the culture Lab. No. 103. The results obtained are presented in Chart No. 3. 1, 3, 4 and 5 are determined strains of bacillus typhosus, while 6, 7, 8 and 9 are at present under examination as belonging to the bacillus typhosus group. It will be noted that this antiserum of 97-a agglutinated also the paracolon organism, (bacillus enteritidis Gärtner) but not the bacillus paratyphosus. Upon the culture from Lab. No. 103, this serum has no effect.

From the results of the biological and morphological characters, the agglutination experiments, and the absorbing ability of this culture from Lab. No. 97-a for the antityphoid agglutinin, it seems justifiable to call this organism the bacillus typhosus.

Respectfully submitted,
Herbert Fox,
Chief of the Laboratories.
D. Rivas,
First Assistant in the Laboratories.

The conclusion reached by Drs. Fox and Rivas must be that of every experienced bacteriologist. The fact that they met with success in a quest where so many have failed, is due possibly not so much to superior skill as to the fact that they happened to receive samples containing an unusual number of typhoid organisms, to the large number of samples furnished, and to the industry and pertinacity of their search. The practical value of their discovery can not be overestimated, as it enabled the Department of Health to declare with absolute authority that which it had before asserted inferentially, that the water shed was polluted, and, further, to point out the precise place in the particular reservoir where the pollution was detected. From this resulted the complete coöperation of the city authorities and the water company with the department in its efforts to remove every source of pollution from this large water shed of fifty-nine square miles, and to thoroughly cleanse the entire system from dangerous organisms.

I may state that not less than five hundred separate sources of pollution, ranging from a hotel sewer to a piggery, were discovered and removed, and this in a mountainous country, in zero weather, with the ground frozen to the depth of eighteen inches and often covered with a foot of snow.

AFTERMATH.

It is now about a year and eight months since *Collier's* announced the "Great American Fraud" series. In the ten long articles which composed that series, and the innumerable minor paragraphs which accompanied it, two hundred and sixty-four patent medicines, quack doctors, firms, individuals, institutes, and institutions were attacked and denounced. It is now nearly four months since the last article was printed, a period ample for all the attacked who had a grievance to bring their suit or state their protest. The time seems appropriate, therefore, for a summing up, which summing up discovers, out of all the two hundred and sixty-four concerns and individuals attacked, just two suits for libel on the docket and two personal protests filed with us. These are all that now remain; the scores of threats, lawyer letters, and loudly proclaimed suits which never materialized—they only remain as an amusing recollection.

* * * * * * *

It was said in the beginning there remained four months after the last patent medicine article was printed just two libel suits—living suits actually on the dockets—and two formal protests that injustice had been done, and appeals to right that injustice. Of the libel suits, one is by Pink Pills for Pale People. This suit is, unhappily, thanks to a subsidized press which panders to patent medicine revenue, serving its real purpose. Every few months some technical move of the lawyers is made; and then, throughout the length and breadth of this land, in the newspapers which carry the Pink Pills advertising, appears a paragraph of tainted news, whose phrasing leaves with careless readers the impression that Pink Pills has just won its hundred thousand dollar libel suit against *Collier's*.

As to the other libel suit, to tell here the reason why the complainant will never bring that suit to trial, would serve no public purpose, and would appear vindicative. Sufficient it is to say here that before the suit was brought, the complainant's claim that wrong had been done him in the articles, was generously and carefully considered in this office, and conscientiously denied.

Of the two protests still unheard, one was Blosser; the other Oppenheimer, and the last represents the one case in all the two hundred and sixty-four where some substantial injustice was done.

The position of this paper toward the proprietors of patent medicines and the quacks who have been threatening us with libel suits has been made clear. Where we are convinced that no injustice has been done, no threat will move us; but the case of the Oppenheimer Institute, which was severely criticized in the last of Mr. Adams's articles, is different. We consider it to be as much our duty when we discover that we have been in error to admit the mistake as to resist intimidation when we are in the right.

An undoubted injustice was done the Oppenheimer Institute by its inclusion in an article under the general head of "The Great American Fraud" and the sub-head of "The Scavengers." The fact that an impression was created that the Institute was a charitable or philanthropic enterprise, while in reality it was a commercial undertaking, and the fact that many of the Institute's advertising methods were questionable and their claim to cure exaggerated—these things did not justify our ranking them, even by inference or by juxtaposition, with the scavengers who traded upon human weaknesses and fed the very habits they professed to cure.

* * * * * * *

The comparison made in the previous article between the Oppenheimer treatment and the Keeley Cure, stating that the Oppenheimer treatment makes extravagant claims and the Keeley Cure only moderate ones, did the Oppenheimer treatment an injustice, for the official claim of the Oppenheimer Institute is the comparatively modest one set forth in the limitation leaflet. Also, in order to be fair to a number of earnest men, we wish to say that a considerable amount of charity work has been and is being done for the poor by the Oppenheimer Institute through its charity department, and many men of high standing and character are interested in it; our criticism of that work was merely that it was sometimes used to advertise the business as a whole.

In order to be complete in this attempt at putting ourselves straight and doing the Institute justice, we will add that a good many of our criticisms, especially with regard to advertising and the split-fee system, related to the past, and that the management of the company has, during the past three years, been very essentially reformed, and in many important ways improved.

"So much for Buckingham." The tale is told. We can now turn the page and dwell for a while on other things. It has been a good job, and Mr. Adams's work has been praised by a score of state and national medical societies all over the land, and the effect has been made permanent in many state statutes. Doubtless, we may have to take a hand in the matter again from time to time. How often, will depend upon circumstances, upon the activities of the Poison-Bund, and upon the part taken by our contemporaries—especially the last, for upon the press rests the whole industry, and we are hoping from this long series no result more valuable than the stirring of a public opinion which will make it unprofitable for newspapers to accept the millions of dollars annually offered by the patent medicine combine. It is a great deal of money, but in order to secure it the newspapers are compelled to shackle their consciences. They could do more than all the legislation that has been or can be passed. —*Collier's Weekly*, January 5, 1907.

THE NURSERY RHYME.

Jack Spratt could eat no fat,
His wife no lean, they say;
So they were wise to compromise
On predigested hay.

—Louisville Courier-Journal.

The Pennsylvania Medical Journal.

PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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Wayne—Louis B. Nielsen, M. D., Honesdale.
Westmoreland—Myers W. Horner, M. D., Mt. Pleasant.
Wyoming—George M. Kinner, M. D., Mehoopany.
York—G. E. Holtzapple, M. D., York.

All commuuications should be addressed to the Pennsylvania Medical Journal, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

Athens, April, 1907.

To do the common duty of each day uncommonly well—this is success.—Anon.

HYPERPLASTIC TUBERCULOUS PERICOLITIS.

In addition to the forms of tuberculosis of the bowel commonly encountered, there is another attended with localized chronic hyperplastic inflammation, involving the submucous, muscular and subserous coats and which may give rise to the presence of tumors and symptoms of intestinal obstruction. An admirable description of the condition is given by Mr. F. S. Kidd (*Lancet*, January 5, 1907, p. 9), who reports three illustrative cases, with a full account of the clinical and pathological features.

The usual situation of the morbid process is the ileocecal region, although it may be found in any part of the large intestine, especially the sigmoid flexure and the rectum. The related mesenteric glands become involved secondarily. That the disorder is in reality due to the tubercle bacillus is demonstrated by the frequency with which this microörganism is found in the lesions, occasionally in conjunction with caseation and giant-cells, and the development of tuberculosis on inoculation of lower animals. It is believed that the bowel becomes infected at some point where the feces tend to stagnate with an attenuated form of tubercle bacillus, such as may be contained in the swallowed sputum from a healing or healed cavity in the lung.

The affection differs from the ordinary

form of tuberculosis in the usual absence of ulceration, of miliary tubercles, and of caseation, and in the presence of characteristic fibrous polypi. It may be mistaken at operation or at autopsy for malignant disease, or tertiary syphilis, and the importance of its recognition is obvious from both prognostic and therapeutic considerations. From carcinoma it differs in duration, in the age of the patient and in the absence of ulceration and of secondary deposits, but histologic examination may be necessary to make the distinction certain.

Clinically the disorder may be latent and it may be discovered only on exploratory celiotomy. Sometimes the symptoms are suggestive of appendicitis, with local persistent exudation. At other times the symptoms are those of chronic intestinal obstruction, with acute exacerbations, with or without a palpable tumor. At still other times there may be obscure symptoms of colic, with a sudden attack of purulent peritonitis, localized or diffuse. At operation a diagnosis may be made of peritonitis secondary to perforation of a malignant ulcer.

The symptoms may consist in colonic pain, vomiting and constipation or diarrhea. The stools may contain mucus or blood. There may be much or little wasting. If ulceration be present there may be signs of a colonic tumor, usually freely movable, and of intestinal obstruction; or the signs may be those of peritonitis, with or without localized exudation or abscess.

The treatment is purely surgical and may consist in excision with end-to-end or lateral anastomosis, short-circuiting, establishment of an artificial anus or simple celiotomy.

E.

THE IMPORTANCE OF COMPARATIVE PATHOLOGY.

Every fact with regard to tuberculosis is important, whether it relates to the disease as it occurs in man or in the lower animals. Much of our most accurate knowledge on the pathogenesis of tuberculosis is derived from experiments and observations on animals. Therefore, the researches that are being made upon tuberculosis of cattle are of general medical interest entirely aside from the public health and the economic importance of the subject.

In the study of tuberculosis of cattle, the laboratory of the Pennsylvania State Livestock Sanitary Board has long held a foremost position. At the British Congress on Tuberculosis in 1900, when Koch stated that tuberculosis of cattle is not transmissible to man and has little bearing on public health, the work of the Pennsylvania laboratory reported by Dr. Mazyck P. Ravenel was the strongest scientific evidence then available to prove that the bacillus of bovine tuberculosis is more virulent throughout the whole animal series than the bacillus of human tuberculosis. This view, and the important relation of tuberculosis of cattle to tuberculosis of children, especially, has since been sustained by much thorough work, and most recently by the English Royal Commission.

In the proportion that dairy products enter into the dietary of man, it is important that cows shall be protected from disease.

The experience of Denmark shows that tuberculosis of cattle may be repressed and finally exterminated by the method devised by Professor Bang. This method is based on the knowledge that practically all of the progeny of tuberculous cows are uninfected at birth, and it consists in keeping such calves apart from sources of infection and thus in rearing them in health. But the great difficulty has been to escape all sources of infection and so some efforts have not been successful. It is here that the process of vaccinating cattle against tuberculosis, as developed by Pearson and Gilliland at the laboratory of the State Livestock Sanitary Board, promises to be of value. This method, which consists in the intravenous inoculation of cattle with tubercle bacilli incapable of producing lesions in cattle, is based on the same principles of the use of the living attenuated germ as vaccination against anthrax and rabies. This method is quite similar to that developed by von Behring.

It has been under study five years and is now being employed in practice for the protection of farmers' herds. It is necessary that it shall be studied and developed still further with the view of obtaining the maximum of immunity at minimum expense.

The economic importance of this question is indicated by the expenditure of nearly $100,000 a year in Massachusetts to repress tuberculosis of cattle, which expenditure has at times been increased to $200,000. With five times the number of cattle in Pennsylvania as in Massachusetts this is equivalent to expenditures for this state of from one half to one million dollars a year. And the losses to farmers are much greater than the expense to the state. But these costs and losses are insignificant as compared with the importance of the purity and wholesomeness of the food supply.

It is evident that adequate facilities should be provided for the study of animal diseases. As experience has shown that this subject does not appeal to private philanthropy, it is necessary that the state shall support this work if the needs of the state are to be supplied. L. P.

MEDICAL BILLS AT HARRISBURG.

The Bowman One Board Medical Bill when it came up for second reading in the House on April 2, was not only amended so as to make it objectionable to some who had been its supporters, but was recommitted to the Judiciary General Committee where it was likely to receive further amendments that would make it an entirely unfair and undesirable measure. Its friends, therefore, decided to make no effort to get it out of that committee, and to ask for its withdrawal from the calendar should it be reported out.

The Wickersham (osteopathic) Bill, No. 211, passed the House, April 3, and is now in the Senate. The osteopaths have been quietly but effectively working for the past two years to secure legislative recognition and were supported by active and paid lobbyists, both lawyers and osteopaths, some of whom were always present in the House. However, the Bowman Bill would have passed both houses by a good majority if it had not been for the very active opposition of the homeopaths and eclectics, aided by the indifference of many of our members and the quiet opposition of a few of our prominent members. S.

DOMESTIC ANIMALS AS A CAUSE OF THE TRANSMISSION OF DISEASE TO MAN.

Much evidence is accumulating in regard to the large number of diseases which man contracts from the lower animals. Indeed, it may safely be stated that but little is known in regard to the important rôle taken by flies, mosquitoes, bedbugs, fleas, etc., notwithstanding the facts already established in regard to malaria, yellow fever, plague, and a host of other contagious diseases. Remlinger and Osman (*Revue générale des sciences*, quoted in *St. Louis Medical Review*, March 23, 1907), having observed a case of scarlet fever transmitted by a pet cat, undertook experiments upon the dog and cat to show to what extent these animals might be the source of infection. Pathogenic organisms were placed upon the hairs of the animals, experimented upon and an attempt was made to recover these organisms after the lapse of varying periods of time with the result that anthrax bacilli were found after two months, while typhoid and diphtheria bacilli were present after several weeks. It would therefore seem to be good policy under no conditions to permit animals to be present in the sick room of any one suffering from a contagious disease, no matter whether or not there is direct proof as to such animal being capable of transmitting the disease. Window screens, absolute cleanliness, and proper disinfection are also necessary to prevent the spread of diseases by creeping and flying insects. We owe it to the well not to let them contract disease from the sick.

H. W. C.

THE OPPENHEIMER INSTITUTE.

On another page will be found extracts from an article entitled "Aftermath" appearing in *Collier's* for January 5, 1907, and dealing with suits and protests resulting from the series of articles by Samuel Hopkins Adams on "The Great American Fraud." Readers of the JOURNAL who may have been interested in the reprint in our issue for November, 1906, of Mr. Adams' article on the Oppenheimer treatment are requested to read these extracts from "Aftermath." S.

EXAMINATIONS BY BOARD OF EXAMINERS.

The next examinations of the Pennsylvania State Board of Examiners will be held at Harrisburg, June 25, 26, 27, and 28, in Russ Hall, 15 North Second St., and City Gray's Armory, Corner of Second and Forster Streets. The first session on June 25 will begin at 9 A. M.

All candidates must have their credentials completed and have a card from the secretary of the Medical Council to present at the door at the time of examination. Every candidate will be required to furnish a cabinet photograph of himself indorsed in his own hand writing on the back and indorsed on the back by the dean of the college from which he graduated, certifying to the correctness of the photograph and to the genuineness of the signature. In cases where the dean has died or the college has ceased to exist, an affidavit signed by the candidate must accompany the signed cabinet photograph.

Candidates desiring to file applications should apply to Dr. N. C. Schaeffer, secretary of the Medical Council, Harrisburg, Penn., or in the matters relating to the work of the board, to Dr. W. D. Hamaker, secretary of the Board of Medical Examiners, Meadville, Penn.

W. D. HAMAKER.

SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS.

The Sixth International Dermatological Congress will be held September 9 to 14, 1907, at the Academy of Medicine, 17 West 43d Street, New York City. Any member of the medical profession in good standing may become a member of the Congress by registering with the secretary-general, John A. Fordyce, M. D., 80 West 40th Street, New York City. S.

INTERNATIONAL CONGRESS OF PHYSIOTHERAPY.

The Second International Congress of Physiotherapy will be held in Rome, Italy, October 13-16, 1907. William Benham Snow, M. D., 349 West 57th St., New York, is the secretary of the American committee.

S.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

The twenty-fourth annual meeting of the American Climatological Association will convene at Hotel Willard, Washington, D. C., May 7, 1907. Dr. Guy Hinsdale, Hot Springs, Va., is the secretary. S.

Changes in Membership of County Societies.

The following new names have been reported since the March JOURNAL was printed: G. Walter Beane, McKees Rocks; Lester H. Botkin, F. J. Madders, William S. McCausland, Duquesne; J. C. Harrington, Wilkinsburg; Joseph W. Fisher, Allegheny; Walter G. Goehring, A. P. Kohberger, John W. Worrell, Leo J. Wright, Pittsburg; Eugene O. M. Haberacker, A. J. Hamilton, M. Clay Stayer, Altoona; Samuel A. Carpenter, Phoenixville; Clement E. Sayers, Hawthorn; Horace Darlington, Concordville; William B. Washabaugh, Erie; W. A. Evans, Clymer; R. S. Keeler, Marion Center; M. D. Campbell, Plumville; S. Mann Uhler, Pen Argyl; William Ruoff, Philadelphia; Rudolph A. Constien, Ashland; Henry Louis Baldwin, Auburndale, Massachusetts; Robert L. Ashbrook, Caleb J. McNulty, Washington; William Martin Bigger, Bentleysville; Philip A. Ley, Donora; Oscar T. McDonough, Claysville; Robert V. Stewart, Monongahela; Robert A. Hildebrand, Glen Rock.

Frank Swartzlander (Univ. of Pennsylvania, '63) died at his home in Doylestown, March 31, after a few hours' illness brought on by Bright's disease, aged 64.

Louis F. Suesserott (Univ. of Pennsylvania, '79) died at his home in Chambersburg, March 2, from pleuropneumonia, aged 50.

Bruce P. Steele has resigned from the Huntingdon County Society.

J. Clarence Caldwell has removed from Bakerstown to 133 S. Main St., Butler.

George W. Hiett has removed from Wilkinsburg to Baltimore, Maryland.

Ralph L. Hill has removed from Allegheny to Glenfield.

Frank B. Miner has removed from Perrysville to Seneca Falls, N. Y.

Jacob E. Ernest has removed from Williamsburg to Johnstown.

Martha S. Everitt has removed from Scranton to 714 Madison St., York.

B. F. R. Clark has removed from Narberth to 1224 Spruce St., Philadelphia.

Allen H. Glover has removed from Knoxville to Morris.

John L. Burkholder has removed from Ruffsdale to 58 North Mercer St., New Castle.

Present membership 4721. S.

State News Items.

MARRIED.

Dr. John Brice Cressinger and Miss Eva Haas, both of Sunbury, April 1.

DIED.

Dr. Joseph D. Livizey (Univ. of Pennsylvania, '71) in Philadelphia, February 25, aged 65.

Dr. Austin F. Denlinger (Univ. of Michigan, '83) in Lansford, March 1, from hemorrhages, aged 50.

Dr. Henry H. McDonough (Cleveland Med. Coll., '76) in Claysville, March 16, from cardiac dropsy, aged 71.

Dr. John H. Brinton (Univ. of Pennsylvania, '50) in Philadelphia, March 17, from brain paralysis, aged 75.

Dr. George Lee Fife (Western Pennsylvania Med. Coll., '90) in Blair Station, February 26, from pneumonia, aged 69.

Dr. Jacob Kulp Cassel (Pennsylvania Med. Coll., Gettysburg, '71) in Philadelphia, March 2, after a short illness, aged 72.

Dr. William J. Butler (Pennsylvania Med. Coll., '85) in Wilkes-Barre, March 4, as the result of injuries received in a railroad accident.

Dr. Hance C. Chesney (Med. Coll. of Fort Wayne, Indiana, '83) in Custer City, March 1, from uremia, after an illness of two days, aged 44.

Dr. James B. McGrew (Coll. of Physicians and Surgeons, Baltimore, '83) formerly of Pittsburg, at the home of his brother in Finleyville, March 16, after a prolonged illness, aged 52.

ITEMS.

Dr. J. Lawrence Eisenberg has been elected pathologist of Charity Hospital, Norristown.

Dr. Alfred Gordon was elected president of the Philadelphia Neurological Society, and Dr. T. M. Weisenburg was elected secretary.

Dr. James Tyson, Philadelphia, was guest of honor at the twenty-fifth annual banquet of the medical class of 1882 of the University of Pennsylvania, on March 19.

Dr. Herman A. Brav, Philadelphia, was elected proctologist to the recently established department for disease of the rectum, at the American Hospital for Diseases of the Stomach.

Dr. William W. Keen tendered his resignation as professor of principles of surgery of the Jefferson Medical College, on March 11. He sailed March 27 for Europe where he will spend about two years.

Blair County Physicians at a Banquet. A number of members of the Blair County Medical Society attended the theater in Altoona, last month, and were afterward banqueted at the Colonial Hotel. The party was composed of Dr. and Mrs. Isenburg of Williamsburg, Dr. and Mrs. Nason of Roaring Spring, Dr. and Mrs. McBurney, Dr. and Mrs. Shaffer, Dr. and Mrs. Bloomhardt, Dr. and Mrs. Oburn, Dr. and Mrs. Ross, Dr. and Mrs. T. M. Morrow, Dr. and Mrs. McConnell, Dr. and Mrs. Brubaker, Dr. and Mrs. Howell, Dr. and Mrs. Fetter, Dr. and Mrs. A. S. Stayer, Dr. and Mrs. Ford, Dr. and Mrs. Glover, and Dr. Hamilton of the Altoona Hospital.

Communication.

ORGANIZED VACCINATION.

Ann Arbor, Michigan, March 23, 1907.

To the Editor:—I have read with much interest the article by Benjamin Lee, M. D., of Harrisburg, in your issue of March, 1907. I see from this that I failed to make my position understood; but in defense of myself I must say that I have read the article (Compulsory Vaccination, etc., *American Journal of the Med. Sci.*, Feb., 1907) before two medical societies, two scientific societies made up of doctors and laymen, chiefly teachers and lawyers, and besides that have had a number of letters from physicians in various parts of the country in regard to the article, and have not heard of any one who got the same impression that Dr. Lee did. Dr. Lee, in fact, has ascribed to me a theory regarding the improvement of vaccination that I do not hold and never intended to advance. Regarding the German method, I said, "Doubtless the future may show a better way of preventing smallpox than the German method; hitherto it has not been found." I will not take up your valuable space arguing about the Russian experiment because I have never thought of advocating such a complicated scheme. Nor shall I discuss the question whether there is in the United States "a large majority of people possessing intelligent and unprejudiced minds," though I think there is room for considerable discussion about Dr. Lee's position on both these points. As to the German method, I believe its success depends not on the fact that it requires compulsory vaccination, but because it enforces organized or systematic vaccination. Not only were all the legal and medical features worked out by experts, and revised when it seemed desirable, but pains were and are taken to have the whole subject understood by the people and every effort made to secure their coöperation. There is no suggestion that the people are not intelligent enough, or too prejudiced, to assist in the carrying out of the law. Part of my article was intended to show that it is legally possible to get as stringent laws in the United States as are needed, or as the German ones. Dr. Lee thinks we have been trying all sorts of expedients. I should say "trying" is too strong. For the most part we have huddled, or at the best passed laws as inefficient as Canute's edict against the waves. Notwithstanding Dr. Lee's opinion to the contrary, I believe that the study of vaccination laws and practice not only in Germany and Russia, but all over the world, will prove that what we need is not merely compulsion, but still more, a well-planned and rationally executed system. In fact, Dr. Lee's article convinces me of the difficulty of this part of the subject, in regard to which I was already fairly well informed. GEORGE DOCK.

INFORMATION WANTED OF UNIVERSITY OF PENNSYLVANIA MEDICAL GRADUATES.

A committee of the alumni of all departments of the University of Pennsylvania is preparing a catalogue of all of the graduates and non-graduate matriculates of the University. The list appended represents the medical graduates who are registered from the State of Pennsylvania, and covers the letters A, B, and a small part of C. Our readers will lighten not a little the difficult labors of the committee in collecting data of these graduates, some of more than a century ago, if they will send at once whatever information they may have to the Editor of the Catalogue Committee, University of Pennsylvania, Philadelphia.

Information is especially wanted as to full name, parents' names, full date and place of birth and of death, academic degrees received, prominent positions held, and any printed references to the men named.

Name	Year.
Abbett, Henry, Jr.	1825
Abel, Frederick T.	1875
Abercrombie, Charles	1826
Abrams, Levi West	1867
Ackerman, Abraham K.	1868
Aiken, John	1862
Aitken, Henry L.,	1828
Albright, Francis G.	1851
Albright, John S.	1859
Albright, Joseph S.	1860
Alder, Lel Lewis	1850
Alexander, Clark H.	1846
Alison, Robert	1819
Allen, Thomas Lancaster	1813
Allison, David R.,	1850
Allison, Joseph Johnson	1837
Allison, Nathaniel Stout	1810
Alstadt, Alfred L.	1851
Anderson, David F.	1853
Anderson, James Ross	1865
Anderson, Matthew	1822
Andrews, John	1793
Anthony, Thomas P.	1814
Applebach, Nelson	1860
Ard, Joseph B.	1832
Armitage, Austin W.	1869
Armstrong, James A.	1861

Arndt, Peter F.	1855
Arthur, Enoch	1856
Arthurs, Addison	1853
Ash, Caleb	1831
Ash, Joshua W.	1826
Ash, Thomas Forrest	1827
Ashmead, Theodore	1822
Ashmead, William	1826
Ashton, Isaiah Heylin	1870
Atkinson, Mahlon	1813
Bashe, George M.	1835
Bacon, William C.	1860
Bahl, Charles H.	1864
Bailey, George	1851
Bailey, William Diven	1862
Baldwin, Joseph	1830
Ballou, Giddings M.	1868
Banks, John	1824
Baratet, Prosper Augustin	1868
Barber, John	1862
Bare, Adam S.	1844
Barlow, Frank J.	1849
Barnes, John	1812
Barhill, John Redman	1814
Barnitz, Alexander H.	1828
Barnwell, William	1822
Barton, Samuel A.	1827
Batdorff, Daniel T.	1862
Baugh, Daniel, Jr.	1826
Baughman, Jacob	1826
Baum, Andrew David	1840
Baum, William John Christian	1823
Bean, James M.	1854
Beans, Silas H.	1825
Beatty, Charles C.	1816
Beatty, James	1788
Beaumont, Horatio N.	1864
Becker, Aaron D.	1856
Beers, Solomon	1850
Belford, Charles Shafer	1873
Berluchy, Samuel L.	1848
Bernadou, Edward	1845
Berton, A. A.	1817
Beshler, John Boyer	1861
Bessonett, Charles H.	1828
Bethell, Charles P.	1858
Bethell, John P.	1838
Bidlack, J. B. Wallace	1869
Bieber, Edwin H.	1848
Bieber, William S.	1839
Billings, Thomas	1813
Bireks, Jacob B.	1874
Birkey, Isaac Myer	1865
Bishop, Calvin Stanhope	1854
Bispham, John E.	1868
Black, Robert	1797
Blair, James M.	1854
Blaker, Gilbert H.	1851
Bliss, Chester I.	1841
Boardman, Charles Hodge	1862
Bockius, Albert Atlee	1868
Boker, Charles Stewart, Jr.	1852
Bolton, Charles	1840
Bonebrake, Melchi	1867
Bonsall, Jesse Kersey	1828
Bourns, John Francis	1849
Bouton, Bennet A.	1830
Bowker, James	1873
Boyd, John	1834
Boyd, John Oliver	1870
Boyer, Samuel P.	1862
Boyle, Philip	1864
Bradford, Samuel	1832
Brady, Thomas	1837
Bray, Daniel	1870
Brehman, George Edmund	1869
Brendlinger, Jonathan C.	1870
Breneman, Edward de Welden	1861
Brewster, William Carll	1824
Bringhurst, Lewis B.	1831
Brinton, George Henry	1823
Brinton, John B.	1851
Brinton, William B.	1863
Brodhead, Cicero	1875
Brown, George W.	1814
Brown, Henry Clay	1876
Brown, John R.	1836
Brown, Thomas	1835
Brown, William	1801
Bruce, George D.	1833
Brugh, Ezra	1850
Bruner, Isaac	1826
Bryan, James	1834
Bryan, Joseph Rhodes	1840
Bryant, Thomas	1807
Bryant, Thomas Sydenham	1835
Buchanan, James A., Jr.	1862
Buchanan, William Fairlamb	1862
Buffington, Lee W.	1837
Bull, William Hunter	1877
Bullard, Edwin Charles, Jr.	1864
Bullick, John Foulk	1830
Bullock, Joseph, Jr.	1809
Burd, James Patterson	1871
Burg, Washington	1859
Burg, William H.	1855
Burgess, Jesse	1843
Burgess, John	1848
Burr, Richard	1846
Burrell, Benjamin	1813
Burrell, John W.	1826
Burson, Stephen	1816
Bush, Andrew	1832
Byers, George	1863
Cadwallader, D. Willis	1858
Cadwallader, Peter	1817
Caldwell, Lazarus F.	1846
Campbell, Hugh	1818
Campbell, William H.	1862
Cantwell, Terence Joseph	1850
Capwell, Albert M.	1856
Carman, Benjamin R.	1858
Carothers, Andrew Edwards	1863

Official Transactions.

MINUTES OF THE SPECIAL MEETING OF THE HOUSE OF DELEGATES, HELD IN HARRISBURG, MARCH 19, 1907.

The meeting was called to order at 12:30 by the President, Dr. I. C. Gable, who read the following call which was sent to the presidents and the members of the House of Delegates of each component county society.

York, Pennsylvania, March 16, 1907.

To the Members of the Board of Trustees and House of Delegates of the Medical Society of the State of Pennsylvania:

Dear Doctor: The urgent need of united and vigorous action on the part of the medical profession in regard to the proposed legislation for the creation of a single board of medical examiners has prompted a number of members of the official body of our state society to request a call for a special meeting of the Board of Trustees and House of Delegates to consider, in general conference, the provisions of the Bowman Bill which was favorably reported from the Committee on Public Health and Sanitation in the House of Representatives on March 7, 1907, and will come up for second reading next week.

In response to said requests, a meeting of the Board of Trustees and House of Delegates of the Medical Society of the State of Pennsylvania is officially called and will be held at the Academy of Medicine, North Second Street, Harrisburg, Penn., on Tuesday, March 19, 1907, at twelve o'clock, noon.

Your presence is earnestly requested.

I. C. GABLE, President,
Medical Society State of Pennsylvania.

ROLL CALL.

Present: Berks County, I. H. Hartman, president, F. W. Frankhauser.

Cumberland County, T. W. Preston, president.

Dauphin County, E. L. Keen, president, J. B. McAllister.

Huntingdon County, A. B. Brumbaugh.

Lackawanna County, L. M. Gates.

Lancaster County, A. R. Craig, W. B. Weidler.

Montgomery County, O. C. Heffner, president.

Philadelphia County, J. B. Walker, president, J. B. Roberts, Henry Beates, Jr., H. W. Cattell, C. A. E. Codman, A. M. Eaton.

Susquehanna County, J. G. Wilson.

Warren County, M. V. Ball, president.

Washington County, J. B. Donaldson.

York County, A. A. Long.

Trustees: T. D. Davis, G. D. Nutt, I. C. Gable, C. L. Stevens.

Total, twenty-four.

There were also present during the meeting the following: Drs. J. Madison Taylor of Philadelphia, G. E. Holtzapple of York, J. Wesley Ellenberger of Harrisburg and T. B. Appel of Lancaster.

After considerable discussion by Drs. Stevens, Brumbaugh, Long, Craig, and Beates, the following resolution was offered by Dr. Craig and seconded by Dr. Donaldson:—

Resolved, That the House of Delegates thoroughly endorse the action and actions taken by the Committee on Public Policy and Legislation in presenting to the Legislature the Bowman Bill.

This resolution was discussed by Drs. Beates and McAllister and carried unanimously.

Dr. J. Madison Taylor read the following resolution recently passed by the Legislative Committee of the Philadelphia County Medical Society:—

Whereas, A bill is now before the Legislature of Pennsylvania called the Bowman Bill, No. 144, designed to secure the unification of requirement for practitioners of medicine applying for license to practice medicine in Pennsylvania, whose sole object is to fix a reasonable standard of fitness to serve the best interests of all, and which assures to all applicants of whatsoever school equal rights, privileges, and administrative powers.

Resolved, That we, the 1200 members of the Philadelphia County Medical Society earnestly urge upon our representatives, to individually and collectively use their strongest efforts to secure the passage of this bill which will serve the best interests of the state and will then raise us to a par with those states which have most advanced medical legislation and secure reciprocity.

ROLAND G. CURTIN, Chairman.
J. MADISON TAYLOR, Secretary.

After further discussion by Drs. Craig, Stevens, Ball, Gates, Codman, Donaldson, Eaton, Frankhauser, Beates, and Heffner, the Committee on Public Policy and Legislation was instructed to take what further action they thought proper in the matter.

Adjourned.

THEODORE B. APPEL, Assistant Secretary.

Reviews.

DISEASES OF THE LUNGS. Designed to be a practical presentation of the subject for the use of students and practitioners of medicine. By Robert H. Babcock, A. M., M. D., until recently Professor of Clinical Medicine and Diseases of the Chest, College of Physicians and Surgeons (Medical Department of the Illinois State University), Chicago; etc. New York and London: D. Appleton and Company, 1907. 8vo., pp. xix, 809. Price, cloth, $6.00.

Dr. Babcock has presented us with a worthy companion to his earlier work on diseases of the heart and arterial system. In the present volume he discusses comprehensively the various disorders that affect the bronchi, the lungs and the pleura. To each of these subdivisions he devotes a separate section, and in successive chapters he discusses with commendable fullness and lucidity the different aspects of bronchitis—acute, chronic, plastic—bronchiectasis, asthma, tracheal and bronchial stenosis, foreign bodies in the bronchi, perforation of the bronchi, derangements in the pulmonary circulation, hemoptysis, acute fibrinous pneumonia, acute bronchopneumonia, pulmonary abscess and gangrene, chronic interstitial pneumonia, pneumonokoniosis, pulmonary emphysema, atelectasis, pulmonary tuberculosis, fungous diseases of the lungs, pulmonary syphilis, echinococcus cysts of the lungs, malignant growths in the lungs; acute and chronic pleurisy, pleural effusion. The test is amplified by 104 illustrations and 12 colored plates, and reference is made easy by a full index. Dr. Babcock's descriptions are clear and forceful; his style simple and direct. The typography of the work is beyond criticism and the binding is tasteful. The publication should receive a most cordial reception. E.

AN EPITOME OF DISEASES OF THE NOSE AND THROAT. By J. B. Ferguson, M. D., of the New York Postgraduate Medical School. 12mo, 243 pages, with 114 engravings. Cloth, $1.00, net. Lea Brothers & Co., Publishers, Philadelphia, 1907. (Lea's Series of Medical Epitomes. Edited by Victor C. Pedersen, M. D., New York.)

The book is of convenient size to be carried in one's pocket and is written in a style that makes its reading easy. While no more is claimed for the book than that it is an epitome, the diseases of the nose and throat are treated with sufficient fullness to serve as an excellent review. C.

A MANUAL OF PATHOLOGY. By Guthrie McConnell, M. D., Pathologist to the St. Louis Skin and Cancer Hospital and to St. Luke's Hospital, St. Louis, Missouri. W. B. Saunders Company, Philadelphia, 1906. Flexible leather, $2.50 net.

This book fairly meets the claims made for it by the author who says, "It is not an attempt to take the place of the more voluminous text-books on pathology, but that it shall enable the student especially to rapidly acquire the salient points of a subject." We would enlarge the author's modest claim and commend it to those physicians in active practice who desire to acquaint themselves with this important branch of medicine.

The work follows the usual lines in its divisions into general and special pathology, each part being subdivided into its component parts with great care for a proper sequence. The definitions are almost classic in their completeness and brevity; for illustration, "A tumor is a functionless new growth, atypical in structure and frequently harmful to the individual." The plates, both pathologic and bacteriologic, are of good quality and sufficiently numerous for a complete demonstration of the text.

The chapter on laboratory technic gives valuable information to the student in pathologic and bacteriologic examinations, and the formulas for the more important solutions needed in a complete laboratory outfit as well. A useful and interesting chapter is that devoted to postmortem examinations. It details the important steps in such proceedings.

The book is strong and worthy of commendation, albeit there is a tendency here and there to step over into the field of practice; however, for the student, this is not an unmixed evil. C. R. P.

THORNTON'S POCKET MEDICAL FORMULARY. New (8th) edition, revised to accord with the new U. S. Pharmacopeia. Containing about 2,000 prescriptions with indications for their use. In one leather bound volume. Price, $1.50 net. Lea Brothers & Co., Publishers, Philadelphia. 1907.

To have arrived at its eighth edition shows a demand that evidences an appreciation of the book. This appreciation is undoubtedly founded on the fact that the Formulary compels an acquaintance with the United States Pharmacopeia even though it be an indirect acquaintance. Whatever assists in the general use of the United States Pharmacopeia is welcome to the shelves of our book cases. C.

MEDICAL DIAGNOSIS. Clinical Methods for Practitioners and Students. Fifth Edition. Greatly enlarged and revised to date. By J. J. Graham Brown, M. D., F.R.C.P.E., F. R.S.E., Assistant Physician, Royal Infirmary of Edinburgh, and W. T. Ritchie, M. D., F.R.C.P.E., F.R.S.E., Clinical Assistant Pathologist, Royal Infirmary of Edinburgh. With 200 illustrations and 8 full page plates in black and white and in color. Price, $3.00. New York: Imperial Publishing Company. 1907.

One of the specially excellent features of this work is to be seen in the effort to explain cause of the various manifestations of disease. Thus, not only are the various râles, characteristic of disease of the respiratory system, carefully described, but the influences which bring about the deviations from the normal are equally well described. With the recognition of the cause of the abnormalities they assume a reality which otherwise would be impossible.

The scope of the work is indicated by the following headings under which the subjects are presented; The General Aspect, Conditions, and Circumstances of a Patient; The Alimentary System; Examinations of the Blood; Circulatory System; Respiratory System; Urinary System; Nervous System; Clinical Bacteriology and Examination of Fluids—Cytodiagnosis.

Every physician who aims to make careful diagnoses will find this an excellent aid in his daily work. K.

PULMONARY TUBERCULOSIS. ITS MODERN AND SPECIALIZED TREATMENT, with a Brief Account of the Methods of Study and Treatment at the Henry Phipps Institute of Philadelphia. By Albert P. Francine, A. M., M. D., of the Staff of the Henry Phipps Institute, etc. J. B. Lippincott Company.

The danger in treating this "new-old" subject by a specialist in the disease is that he may overstate the value of modern procedures and overestimate the value of modern treatment. Dr. Francine avoids both dangers in this valuable and conservative volume. He well says in the prefatory word, "From the terrible days of whisky, cod-liver oil, and a multiplicity of drugs, the pendulum had swung over to the almost equally pernicious theory of the futility of all drugs. The profession was thus stranded between the horns of a dilemma by which they were confused and with which they were unable to cope." The Story of Tuberculosis, yet to be written, will be one of the most remarkable in human, as well as medical annals. The author takes the important position that, though rest, fresh air and exercise are very important adjuncts in the treatment of a case of pulmonary tuberculosis, they do not relegate drugs to the ash heap, and that there is no chronic disease requiring more persistent and watchful care, more absolute personal control on the part of the physician, than does tuberculosis. "Upon these two principles, viz, the general management and the skillful application of remedies to meet complications, the modern and successful treatment of consumption depends."

A chapter on climate deals in a characteristically careful and conservative manner with this important part of the subject. "Other things being equal, change of climate aids materially in recovery" but "certainly one can not condemn too strongly the advice so commonly given, founded on false conceptions, ignorance, and irresponsibility, to go away, live out of doors, take plenty of milk and eggs and not overdo exercise. Those who follow such unfortunate and reprehensible advice are victims to the ignorance of the profession, and are hourly frittering away their chances of recovery." A chapter on diet is equally valuable to the general practitioner because of the care with which it is prepared. There follow scientific dissertations on Koch's tuberculin, serum therapy and drugs, also good chapters on symptoms, prophylaxis, etc.

We gather, from a careful perusal of the book, that in pulmonary tuberculosis, as in many other diseases, *c-a-r-e* spells *cure*.

C. R. P.

NEW BOOKS.

Hygromedry. By Henry Emerson Wetherill, M. D., Lt., Jr. Grade., Surg. and A.I.R.P., N. F. Pa. Fourth edition. Revised and enlarged, with many new plates. Published by the author. 3734 Walnut St., Philadelphia. Price $2.50.

A Study of the Human Blood Vessels in Health and Disease. A Supplement to The Origin of Disease. By Arthur V. Meigs, M. D., Physician to the Pennsylvania Hospital. With 103 original illustrations. Price, $5.00. J. B. Lippincott Company, Philadelphia.

The Technic for Modern Operations for Hernia. By Alexander Hugh Ferguson, M. B., M.D., C.M., F.T.M.S., Professor of Clinical Surgery, Medical Department of the University of Illinois; Professor of Surgery at the Chicago Postgraduate Medical School; Surgeon to the Chicago and Postgraduate Hospitals, etc. Illustrated. Chicago: Cleveland Press, 1907.

Paraffin in Surgery. A critical and clinical study by William H. Luckett, M. D., Attending Surgeon, Harlem Hospital, Surgeon to the Mt. Sinai Hospital Dispensary of New York, and Frank I. Horne, M. D., Formerly Assistant Surgeon, Mt. Sinai Hospital Dispensary. 12 mo.; 38 Illustrations; 118 Pages. Surgery Publishing Co., 92 William Street, New York City. Cloth $2.00.

A Compend on Bacteriology, Including Animal Parasites. By Robert L. Pitfield, M. D., Pathologist to the Germantown Hospital; Pathologist to the Hospital for Lung Diseases, Chestnut Hill; Pathologist to the Widener Memorial School; Late Demonstrator of Bacteriology at the Medico-Chirurgical College, Philadelphia. With four plates and eighty other illustrations. Price $1.00 net. P. Blakiston's Son & Company, Philadelphia, 1907.

Psychology Applied to Medicine. Introductory Studies. By David W. Wells, M. D., Lecturer on Mental Physiology, and Assistant in Ophthalmology, Boston University Medical School; Ophthalmic Surgeon, Massachusetts Homeopathic Hospital, Boston; Oculist, Newton (Mass.) Hospital. Illustrated, nearly 200 pages, with Bibliography and Index. 12mo. Extra Quality Paper. Neatly Bound in Cloth. Price, $1.50 net. F. A. Davis and Company, Philadelphia.

Text-Book of Psychiatry. A Psychological Study of Insanity for Practitioners and Students. By Dr. E. Mendel, A. O. Professor in the University of Berlin. Authorized Translation. Edited and enlarged by William C. Krauss, M. D., Buffalo, N. Y., President, Board of Managers, Buffalo State Hospital for Insane; Medical Superintendent, Providence Retreat for Insane; Neurologist to Buffalo General, Erie County, German, Emergency Hospitals, etc.; Member of the American Neurological Association. 311 Pages. Crown Octavo. Extra Cloth, $2.00 net. F. A. Davis Company, Philadelphia.

Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, January 3, 1907, at 8:30 P. M., the President, Dr. Wilmer Krusen, in the Chair.

The Treatment of Eclampsia, by Dr. John C. Hirst. At the University of Pennsylvania Maternity the routine treatment of eclampsia consists of:—

1. Chloroform to avert the attack, if possible.
2. Fifteen minims of fluid extract of veratrum viride hypodermically.
3. Wash out stomach and through the tube introduce two ounces of castor oil and four drops of croton oil.
4. Hot vapor bath or hot pack for thirty minutes in every four hours.
5. Hypodermoclysis of 0.1 salt solution under breast every eight hours.
6. If convulsions recur, repeat veratrum viride in five minim doses every hour for three doses and then if blood pressure is still high and patient cyanotic, venesection is performed, removing eight to sixteen ounces of blood.
7. Under ordinary circumstances let the labor alone.

Morphin and pilocarpin are not used routinely, but their use is restricted to desperate cases only. Venesection is not used routinely, at least, until veratrum viride has been given a trial. Accouchement forcé is used only under three conditions: (1) When the patient is far advanced in spontaneous labor, forceps are applied. (2) If patient is seen very early after the first onset of convulsions, it may be advisable to interfere. (3) If patient is going from bad to worse under treatment, the uterus is emptied as a last resort. The method employed is either vaginal hysterotomy and forceps or the Pomeroy bag, followed by forceps. The latter method is probably the better.

The cases studied were 88 cases of eclampsia and 278 cases of albuminuria. This treatment gave a mortality, excluding cases brought in in a moribund condition, of 13.4 per cent. Of the cases of albuminuria, 40 had had eclampsia in previous labors (one four times) but escaped under treatment.

Dr. Richard C. Norris: A critical study of a series of cases of an important disease deserves great credit. I have not yet closely analyzed my records at the Preston Retreat, but casual reference shows that I average two or three cases of eclampsia in a year, in all about thirty cases. During the same period of time there have been some forty odd cases in which I have induced labor for threatened eclampsia. I usually see four or five cases of eclampsia every winter in consultation. I have had but one case of eclampsia in my own private practice in fifteen years. In the treatment of this disease I think we must first make up our minds that all cases are not to be treated alike. In my entire experience at the Retreat, where we have little emergency work, and therefore relatively few neglected patients, I have yet to lose a case of eclampsia. There have been, however, three deaths due to toxemia without convulsions. I have never done Cesarean section nor used a Bossi dilator in eclampsia at the Retreat. When the cervix was dilated, forceps or version has been resorted to and prior to dilatation eliminative treatment is vigorously employed while a bag is used to obtain dilatation. Of all the modes of elimination I think that by the bowels is the most valuable. From my own experience I conclude that purgatives are above all other means the most valuable means of elimination. With one exception I have yet to see a woman die of eclampsia from whom I was able to secure from twelve to twenty stools in twenty-four hours. This is my first aim in treating any case. The patients I have seen die are those so overwhelmed with poisons that any method of purgation, in fact, any method of treatment, met with no response whatever. Two ounces of Epsom salts are first administered and if vomited then three to five drops of croton oil (five drops have been the minimum dose in my hospital patients) are given in sweet oil. Unless a patient is purging or sweating freely, excessive amounts of salt solution add inevitably to the danger of the case, not infrequently causing death either from edema of the lungs or of the brain. Unless purgation is free, salt solution is best used in moderate amounts, not more than a liter being given twice in twenty-four hours. Where there is free purgation I use saline solution hypodermically and by the bowel. Dr. Hirst mentioned the dose but not the preparation of veratrum, whether the extract or the tincture. The large doses should be used with caution. In some cases of eclampsia large doses of veratrum are distinctly contraindicated, for the heart action may really require stimulation and not depression. In cases in which the clinical history shows the condition to be of sudden onset, veratrum would be useful given in moderate, frequently repeated doses until it has markedly slowed the pulse. The vapor or hot air bath is a slow method of elimination and I have believed not so efficient as elimination by the bowel. Morphin, owing to my early training, I have usually omitted. I have come in recent years to believe that we must, in our treatment of eclampsia, aim, as far as possible, to differentiate between what we believe to be the different types of this disease. Cases showing a slow onward progress suggest a kidney type in which the woman has had Bright's disease or gives a history of trouble with her kidneys prior to pregnancy. In that group of cases morphin would be a bad drug to give, especially in the interstitial type as pointed out by Dr. Tyson not long ago.

There are other groups of cases that we may look upon as being of intestinal origin. The history of the case will show that the woman has been chronically constipated. Here large doses of morphin to control convulsions and copious lavage of the bowel would be of value, and the secret of success is in the large dose.

Another group of cases is hepatic in origin. Clinically I have always felt that these were the most hopeless and the ones so depressed with a poison peculiarly virulent that many are almost hopeless under any plan of treatment. We may bleed, try to purge, sweat, or do what we will and many of them will die in spite of all treatment. In recent years we hear much of the syncytial origin of the toxins of eclampsia, and while we have nothing to prove this theory, I am inclined to group those as possibly of syncytial origin in which the onset is sudden and without premonitory signs. These, too, are the cases which require surgical help, and in such a case I would not hesitate to either stretch or cut the cervix and deliver the patient rapidly. I think the more we study our cases, the more convinced we feel that there are different types of eclampsia and that each case should not necessarily be treated as the last one we saw.

While I say that we have had no deaths at the Retreat from eclampsia, I think it is because we do not have the neglected emergency cases. For the same reason I explain the absence of mortality from sepsis in almost 4000 consecutive cases.

The plan of treatment to which I have always objected is the routine use of vigorous surgical procedure. The literature of the world in the last year or two shows a steadily reducing mortality from the aggressive plan of surgical treatment and I believe that the secret of that is that all cases are being treated that way, the mild and the severe, and the mild ones that would have gotten well without the surgical treatment are credited to it, and the worst cases that will die in spite of surgical treatment continue to give a mortality.

Dr. Barton Cooke Hirst: We have a serious problem in the treatment of eclampsia in the University Maternity on account of the kind of cases brought to us in the ambulance. We receive those cases as a rule which appear to be hopeless if treated at home. So we see not only a large number in that institution, but the worst kind of cases. I have listened with great interest to Dr. Norris; he has emphasized my feelings on a good many points concerning eclampsia, but my experience makes me feel differently about the relative value of sweating and purging.

The difficulty about purging is that it is brought about too slowly and, therefore, we can not depend upon it as the chief method of elimination in the worst cases. I depend mainly upon sweating in such cases. Perhaps sweating is not thought as highly of as it should be because it is so imperfectly carried out in the average private house. Probably the double mortality of the private house cases compared with the hospital cases is due to the imperfect means of sweating the patient. I saw an illustration this autumn in the person of a physician's wife. The doctor in attendance had given the woman up; had left the house saying that the patient would die and that further attendance was unnecessary. The husband asked me to see if I could do anything. I found that the only item in the treatment of the case which had not been thoroughly employed was the sweating. I obtained an apparatus from the hospital, began sweating the patient and gave her salt solution injections. She improved immediately and the next morning was well. Recently I have provided myself with a portable apparatus for thorough sweats for use in private work. Hot blankets and the kind of steam bath usually given do not suffice. The patient must be put into the regularly arranged tent; a steady stream of live steam must be introduced under the tent and the treatment must be continued for thirty minutes when literally quarts of fluid can be drained from the woman's blood vessels. The loss of fluid is replaced by normal salt solution given midway between the sweats. As Dr. Norris has said, if a patient does not sweat the use of the normal salt solution is a mistake. If she does sweat and purge it is a very valuable addition to the treatment. The sweats should be given every four hours during the worst of the attacks, and should be continued once or twice a day for several days.

The question which interests me most in the treatment of eclampsia is the relative advantages of rapid delivery in eclampsia during pregnancy or labor and the conservative treatment. Early in my practice it seemed logical to deliver a woman as quickly as possible. She had eclampsia because she was pregnant and the uterine contents were responsible for the convulsions. But the results of applying this principle were unfortunate. I have often seen women die from the shock of accouchement forcé who might otherwise have recovered. The mortality is lower if one waits until delivery can be effected without violence. Three separate times I have reverted to accouchement forcé by different plans but regretted it almost always. My feeling at the present time after ample experience with both kinds of treatment is that the conservative obstetrical treatment of eclampsia gives the best results; but we can not be governed by an absolutely rigid rule. I see cases every year in the University Hospital and elsewhere in which I deliberately resort to accouchement forcé in spite of my prejudice against it. For example, a woman enters the hospital in bad shape,—comatose and in convulsions. The routine treatment is employed but the woman fails to respond. The condition is desperate and it is obvious that unless something more than the ordinary eliminative and sedative treatment is applied the woman will die, and if she dies as the result of treatment the result is no worse. Some of these cases I have seen get well which I did not expect to recover from any plan of treatment. I recall one day in which two of these cases came in within a few hours of each other. I delivered both women during the same clinic hour by vaginal hysterectomy. Both were desperate cases but both recovered.

Of all the drugs used in the treatment of eclampsia veratrum viride has seemed to me to be the best, although as Dr. Norris pointed out, there are certain cases in which it is inappropriate. Veratrúm viride should not be used in the pale anemic cases that we often see among shop and factory girls. In a strong woman, with high blood pressure, a suffused face, a tendency to edema, I believe veratrum viride to be the best single drug in the treatment of eclampsia. Experience has taught me to value it much more highly than venesection. The latter seems a logical thing to do, but it has not worked well in my hands. It is not easy to bleed an eclamptic patient. With the edema it is often difficult to locate the veins and the disturbance of circulation with the convulsions makes it difficult to extract a sufficient quantity of blood. If veratrum viride is indicated large doses are required; fifteen minims of the fluid extract as a first dose, repeated in five minim doses as often as necessary to keep the pulse at 50 or 60. I have seen but a single case of veratrum viride poisoning. In that case the woman was easily revived by digitalis, strong coffee and alcoholic stimulation.

Dr. Hopkinson: I would like to ask Dr.

Hirst whether he has employed the Straganoff treatment, and his opinion of it. I gave it a trial in the Philadelphia Lying-in Hospital, where a large number of cases of all stages are treated. In eight consecutive cases it was successful, except in the last.

My personal experience has taught me to feel sorry for any woman I see in eclampsia, because I often think that the more we do, the less chance she has of recovery. I am sure I know of cases in which purging and sweating have been the cause of death.

Dr. William R. Nicholson: I think the point of greatest importance in the question under discussion is that brought up by Dr. Barton Cooke Hirst upon rapid delivery in these cases. I remember distinctly the afternoon on which the two patients referred to by him were brought to the hospital and delivered by vaginal hysterectomy. They illustrate perfectly the proper treatment in a case which is evidently going to the bad under the eliminative treatment. In these cases of eclampsia presenting a tightly contracted cervix, with no effacement of its upper portion, the patient being often a primipara at term, but not, however, in labor, the problem is always grave. Such a case came under my care recently at the Maternity of the Presbyterian Hospital, an ambulance case brought in after the patient having had a dozen convulsions. When I first examined her the placing of the hand upon the abdomen caused convulsions. The child was evidently dead. The eliminative treatment was instituted, but the convulsions remained about the same in number, possibly less forcible; the woman was absolutely unconscious, with no approach to return of consciousness between the convulsions, and even after thorough purgation had been obtained, death seemed imminent unless something else were done. I had given morphin (one large dose) as it was evidently a case unassociated with Bright's disease. I, therefore, after some eight hours' treatment decided to deliver and I used the Bossi dilator, the cervix being absolutely undilated. It took about three hours to dilate the cervix to about 8 cm. Before elimination had been instituted the woman could not be examined without inducing convulsions; afterward, under the use of chloroform anesthesia to a very mild degree, it was possible to dilate the cervix without any tearing, to apply forceps and to deliver the child. The woman had subsequently two convulsions and within the next thirty-six hours she returned to consciousness. Had she not been delivered I believe she would have died. I would not go on record, however, as believing this the proper treatment for a large number of cases. I believe if I had attempted to deliver the patient early, by any form of accouchement forcé, the result would have been disastrous. I believe that accouchement forcé is indicated in a certain limited number of cases after eliminative treatment has been instituted.

Dr. Foulkrod: I have been interested in watching the treatment of such cases in three different maternities. Concerning the question of sweating the patient as done by different people in charge of the work, if we have an eclamptic patient at the Jefferson and the nurses are told to sweat her, it is done in such a manner that the patient sweats. In two other maternities in which I have watched patients they invariably do not sweat.

There is a strong feeling against operative interference unless it is imperative. The point raised by Dr. Norris concerning the primary source of infection is, I think, of paramount importance. Another important question is how long may eliminative treatment be continued. It is a question of judgment how long it may be continued before operation is decided upon.

Regarding the source of toxemia, I think it is an open question whether or not in cases of hepatic toxemia the estimation amount of nitrogen excretion will not aid in a diagnosis before the eclamptic seizures. The question in our minds is whether we can not by some such means decide as to whether we may have a severe case rather than one that is mild.

While we are led to believe that almost all the primary causes of eclampsia may be due to the lack of intestinal movement causing some irritation in the various organs, because of the inability of the lower class of people to realize the benefit of keeping the bowels open, we are unable to make an analysis with much care before a patient goes into eclampsia.

Dr. Hirst, closing: Replying to Dr. Norris, the fluid extract of veratrum viride was used. I would also state that I naturally intended the remarks upon the relief of blood pressure to apply to those cases where blood pressure was high, and not to the anemic patients with the low, weak, thready pulse, in which any method of reducing blood pressure would add to the danger of the case.

THE MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA.

Stated Meeting, Monday, February 18 at 8:15 P. M., the President, Adolph Eichholz, Esq., in the Chair.

Some Medicolegal Aspects of Abortion. Dr. Henry W. Cattell referred first to the historical side of abortion and quoted interesting data in regard to the Code of Hammurabi, and the opinions of the ancient lawgivers in regard to this subject. He then discussed the present views held upon the permissibility of ever performing the operation and cited the extreme views taken by certain members of the Roman Catholic church that under no circumstances, even when the case is due to the rupture of an extrauterine sac, should an operation be performed in order to save the life of the mother. Dr. Cattell made the statement that there is no law in the State of Pennsylvania which would prevent any one from offering to perform and making all the arrangements for such a criminal operation. It was only when one so doing was arrested in the act, or had performed the operation that legal proceedings could be instituted. At the present time there is a bill before the Pennsylvania legislature authorizing the medical examining board to revoke the license of any physician convicted by due process of law of performing a criminal operation. An appeal was made to those interested in this matter to aid in the passage of this bill.

William Drayton, Esq., inquired whether it would not be possible in every case of necessary abortion to have present at least three of the medical profession. This would remove from miscarriage the element of secrecy which the two professions are anxious to avoid.

Dr. Henry Beates, Jr., said that when, in his practice, it was necessary to bring on premature birth he notified the coroner and summoned for conference three reputable physicians.

Dr. Thomas H. Fenton thought that if there could be a more clearly expressed statute upon abortion than that at present in vogue and one which would include the giving of testimony, it would be of great value, not only in saving misrepresentation but in uncovering the men really at fault.

William W. Smithers, Esq., said that the language of a penal statute is taken for the greatest benefit to the man accused, and that the burden is upon the state to prove that he comes within it; therefore, if the language be vague, the accused escapes. The clause in the statute regarding abortion is verbose and confusing and could well be displaced by some such wording as the following: Whoever shall by any means whatsoever commit, bring about, or attempt to commit or bring about, an unlawful abortion, or whoever may aid or abet in such abortion, or in bringing about of such abortion, shall be guilty of a felony.

Dr. Cattell, in closing, deplored the fact that arrangements for an abortion could be made openly and that unless the person were caught red-handed nothing could be done in his prosecution.

In the matter of consultation in case of an abortion he thought it the rule in Philadelphia that such consultation should be held in the event of a necessary abortion. In one of the western states a bill had been introduced providing for the presence of more than three persons, one of whom should be a minister.

Reference was further made to the recent organization in Philadelphia of a body of prominent laymen and physicians the main object of which should be to take up this matter and others pertaining to the protection of the public health.

Laws of the Ancient Hebrews Concerning Medical Subjects. Dr. W. S. Wadsworth confined his paper to the Mosaic code as found in the Bible, claiming that the code deserved the most careful study not only because of its historic interest but because of its provisions which, in not a few particulars, are ahead of the most advanced practice in sanitary matters at the present time. An attempt was made to grasp the conditions existing at the time the code was made with a biologist's grasp of the significance of the regulations. The idea was strongly brought out that the laws were taught for the express purpose of keeping the camp clean and the people clean in the sight of their God and that the ceremonialism was only a late degeneration when principles had been confused or had disappeared. The law taught three great groups of duties: (a) to God; (b) to the family; (c) to the brethren. The following seven groups of sanitary rules the author said could be found: (1) The family and all sexual matters; (2) eating, what is clean and what is unclean; (3) diseases, chiefly leprosies and issues; (4) purifications, isolations, examinations and washings; (5) the dead and other unclean matter; (6) priestcraft, the only profession recognized; (7) the seventh day for rest and recovery of normal.

Almost every one of the rules would work directly for the physical betterment of the race. The food regulations would probably improve the health of any community though intended specially for dwellers in a warm country. The subject of leprosies in persons, houses, clothing, etc., was shown to be somewhat vague, but was extremely radical race surgery and probably most beneficial. Concerning issues, the old law of isolation was said to be still ahead of most modern practice. The physical, sexual and moral cleanness enjoined, with the other rules, accounted for the physical endurance of the race. The regulation regarding the Sabbath was in large measure responsible for the retention of that mental elasticity throughout the ages that has enabled the Jews of all times to be citizens of the world in a way not known to any other race. Passing mention only was made to the matters not written, but passing by tradition, which had almost the full force of the law; but mention was made of the gradual perversion of these traditions as shown by the later writings whereby a wise, vital code of laws became debased into a lot of ceremonial rules without significance or excuse.

Dr. Henry Leffmann accepted Dr. Wadsworth's views upon many of the points, although he had often thought that the value and practical results of the Levitical laws had been overrated. He asked for further authority for two statements made by Dr. Wadsworth; (1) regarding the author's cavalier condemnation of the wine of the Jews.

It might, perhaps, be assumed, he thought, that they did not possess the variety of quality that is now available; but he finds no reason in the recollection of his own reading that would justify the decision that their wines were unusually bad. In the second place, he was unaware of any basis for Dr. Wadsworth's statement that the birth of a female child is evidence of a debilitated condition of the mother. Though not having read much recently in this department of biology, he thinks that the trend of opinion among students of sex determination is just the reverse; namely, that male births are evidence of a falling off in maternal condition.

William Drayton, Esq., inquired the author's opinion of the abandoning of the study of anatomy and the punishment of the anatomists in the middle ages; also, whether dead bodies, under the law, were buried or burned.

Adolph Eichholz, Esq., President, referred to the fact that the only slum dwellers who have baths are the Jews. In regard to their dietary law they were regulated by a law preventing overindulgence and this law was sacred to the Jew. Very few drunkards have been found among the Jews. Except for the nervous condition of the Jews, due probably to the terrible strain under which they have lived since the middle ages, they are, as a rule, a healthy race.

Dr. Wadsworth, in closing, referred to the kind of grapes the wine was made of, to the vessels for holding it, and other reasons which argued that perhaps ten per cent. of it was bad. With reference to the disposition of dead bodies, he thought the evidence was toward burial rather than burning. Further reference was made to the ceremonialism which later had crept into the code and which did not possess the vitality of the magnificent old law itself.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, Wednesday, February 6 at 8 P. M., the President, Dr. Arthur V. Meigs, in the Chair.

Infections within the Thorax—Empyema. Dr. John H. Musser gave some statistics showing the frequency with which empyema followed pneumonia and called attention to some points for the early recognition of the condition, that recourse might be had to early operative procedure. The diagnosis must be made in great part from a full understanding of the antecedents of the infection. In a large majority of cases the antecedent condition is pneumonia. The physician should be on his guard for the development of the general phenomena of infection after the pneumonic process has apparently subsided. Dr. Musser called attention to the significance of minor local symptoms during the convalescence of pneumonia and the early period of a beginning empyema. Pain of the steady, persistent type was significant, also the localized tenderness. The physical sign of impaired expansion and the presence of Litten's sign were mentioned as valuable diagnostic points. Little reliance can be placed upon fremitus as it is variable. The voice sounds are not usually different from those found in the presence of effusion. Localized friction is a valuable guide regarding the position of the abscess when it is between the lobes and under the diaphragm. He urges exploratory operation by resection of the rib for the speedy detection and immediate cure of these abscesses.

Dr. Judson Daland spoke of the well-known dangers of the dry tap and the mistaken conclusion sometimes taken that no pus is present.

Dr. S. Solis Cohen heartily endorsed the advice given by Dr. Musser to open the chest fearlessly even when a dry tap is made. He recalled one case in which three dry taps had been made but in which, upon rupture of dense adhesions, a pus cavity was revealed. In still another case seen in consultation the needle removed no pus but resection of the rib showed that pus was present.

Dr. A. A. Eshner said that, in the presence of the signs of pleural effusion and in cases of dry tap with the persistence of the symptoms, resection of the rib is entirely justifiable.

On the Treatment of Chronic Diseases of the Heart. Professor Theodor Schott of Nauheim in accordance with an invitation to lecture in the United States spoke upon this subject. He mentioned that the former method of treatment with rest and digitalis had been inadequate. Even many of the newer remedies were unsatisfactory and had led to a search for other means and the finding of physical methods. These were said to be principally the Swedish and Oertel's methods, as well as the balneological gymnastic treatment devised by himself conjointly with his late brother, August Schott. He spoke first of the Oertel Cure. Oertel's theory, however, concerning the limitation of the supply of liquids proved to be erroneous. Mountain climbing is only notable in a limited number of cases of heart affections, and should really be resorted to towards the end and not at the beginning of the treatment. The Swedish method was said to be principally used in the form of Zander's mechanical contrivances. These do not, however, render the patient independent either of his momentary physical condition or of continued medical supervision. It should not be overlooked that with Zander's machinery the patient is dependent upon time and locality, and above all that it is a very difficult matter to attain a precise degree of individualization in the measurement of the resistances.

The lecturer then described his balneological gymnastic treatment, depicting the physiological action of the baths, their influence upon the heart, the vascular system and blood pressure. The baths and gymnastics were said to be tonics for the weakened heart, the baths working by means of the sensory, the gymnastics by means of the motor nerve treatments. He then described the course of the bath cure in heart diseases. The treatment begins with the use of simple saline baths, especially in severe cases. The strength of the baths is then gradually and systematically increased until finally the strongest mineral water with the highest percentage of natural CO_2 is resorted to. The full details of the Nauheim baths were given, their solid and gaseous (CO_2) constituents, temperature, duration, etc. The lecturer then spoke of the mode of preparation of artificial Nauheim baths as devised by his late brother and by himself. He also pointed out how their usefulness may be imperiled through not properly preparing them.

Gymnastics are used in two forms: Resistance gymnastics and exercise with self-resistance. In the first of these forms the resistance is offered by an assistant; in the second, by the tensifying (contraction) of antagonistic groups of muscles on the part of the patient himself. The manner of performing these exercises was described and also the cautionary measures which they require. He further mentioned massage, the application of heat and cold, the use of electricity, and the diet. In conclusion a large number of drawings were exhibited showing heart limits, radiograms, pulse tracings with relative blood pressure. In this way, he said, might be illustrated the results obtained in cases of heart disease by the balneological gymnastic treatment.

Dr. S. Solis Cohen spoke of his experience with the method with which Dr. Schott and his brother had enriched therapeutics. He was glad to note the emphasis placed by Dr. Schott upon individualization. The special difficulty he had found in training operators to administer the Schott system of exercises was to have them properly understand the meaning of the word "gentle" in the employment of the gentle resistance exercise. The question of diet he agreed was also of great importance. As with the baths and exercise there should here be strict individualization.

Dr. James M. Anders agreed with Dr. Schott that more is gained in chronic cardiac disease from the physical methods than from the use of drugs alone. He spoke of his personal observation of cases under the author's care and of the efficacy of the methods of treatment. The most marked effect had been in the lessening of the size of the heart. He had more than once been about to note, after the application of the resistance exercises, the decrease of the heart's transverse diameter by half an inch. The principal factors in the increased vigor of the heart were said to be the indirect influence of the saline baths acting upon the cutaneous sensory nerves and the stimulation of the peripheral motor nerves by the resistance exercises.

Dr. Judson Daland spoke of a method of estimating the condition of the cardiac muscle in its reaction before applying the resistance movements. It consisted in certain muscular movements of the body and noting the force of the first sound of the heart.

LEHIGH VALLEY MEDICAL ASSOCIATION.

The nineteenth winter conversational meeting of the Lehigh Valley Medical Association was held in the Assembly Room of the Sun Hotel, Bethlehem, Thursday, February 14, 1907, at ten o'clock in the morning, with Dr. Charles McIntire, president, of Easton, in the chair.

After the routine business the following papers were read and discussed:—

"Pneumonia," by Dr. E. M. Green of Easton; discussed by Dr. J. T. Howell of Wilkes-Barre, and others.

The paper on surgery was read by Dr. H. Augustus Wilson of Philadelphia on "Modern Tendencies in the Treatment of Bone Tuberculosis."

After a free discussion of these papers the society took up the Nurses' Bill and also the Bowman Medical Practice Act. The secretary was instructed to have the sentiments of the society, which were strongly against the Nurses' Bill and strongly in favor of the Bowman Bill, sent to the committees of the legislature having these bills in charge.

After enjoying a sumptuous dinner the members adjourned to meet for the summer meeting at Glen Summit on July 11.

C. J. Kistler, Secretary.

Transactions of the Allegheny County Medical Society.

SYMPOSIUM—TUBERCULOSIS.

EARLY DIAGNOSIS.

BY JOHN W. BOYCE, M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, February 19, 1907.)

It is scarcely necessary to say that there is nothing new, nothing very recent to offer on the subject of diagnosis. There is no wizard's wand that will locate tuberculous deposit for us. The men who are successful as diagnosticians are so not because of some mystic insight that has been granted them and denied the rest of us; but because in the investigation of every case they apply with care and thoroughness methods and principles that are known to all. There is not a man in this room that misses an early diagnosis from ignorance; I wish there were none who missed it through carelessness. That there is at least one such, however, is a personal confession. Many a patient has drifted into my office and drifted out again inside of fifteen minutes without ever having had his coat off, but carrying a prescription for some compound tonic, for some excellent digestive shot-gun, or, perhaps, even for some time-honored "expectorant." That careful examination of such cases would have been an unprofitable inconvenience in many instances, seems a shallow excuse in the presence of the patient to whom it was a life and death matter.

Bad habits are tenacious of life in medicine as elsewhere, and carelessness in this matter has outlived the generation in which it was excusable. Twenty years ago a diagnosis of consumption was equivalent to a death sentence. The physician, optimistic as a matter of duty, demanded proof strong as holy writ before he would blast the hopes of a family with such an announcement. If he even then remained obstinately blind to the truth, he did his patient no harm and, in fact, saved him some months of despair. We now know how much may be done by proper treatment; but we do not always realize in practice the care and promptness that "proper treatment" implies.

From the modern standpoint, how shall we define and reach an early diagnosis? Every recent graduate can stain the sputum; for the older men a paternal municipality does the work gratis. But the finding of the bacilli is scarcely a diagnosis; it is a final demonstration. It implies that tubercles have not only formed but broken down and ulcerated. It very probably involves secondary infections. That they shall spontaneously appear means that the disease has progressed to such an extent as to produce an appreciable quantity of purulent or mucopurulent sputum. Let us then define an early diagnosis as one made before the bacilli has spontaneously appeared.

What are the means for reaching such a diagnosis? Two of the most valuable have been committed to abler hands than mine. The *x*-ray and the tuberculin test are for experts; they will be dealt with by experts this evening.

Less scientific than either is the clinical thermometer. In the long run it is of greater value for it yields results to the tyro.

Scarcely anything in biological science is more marvelous than the elaborate and delicate mechanism by which, from the Arctics to the Tropics, through all the range of normal activity, the temperature of the human body is kept at 98.4 degrees Fahrenheit. Take a morning and evening temperature and what do you find? Some slight variation it is true, but your chart shows, nevertheless, the straightest line that can be drawn in the physiological laboratory. In the tuberculous subject, on the other hand, you get an uncertain, irregular line that plainly shows that some metabolic balance is wavering and will soon turn against your patient. I want to emphasize the point of irregularity; a dot well below the black line is, to me, almost as significant as one above it. Along with these temperatures, if you take them yourself, you get also a pulse accelerated and feeling like the stroke of a light whip,—an irritable, frightened pulse.

Our second step requires care and some judgment. In eliciting the past history we must not attach undue importance to such incidents as happen to everybody. But a multiplicity of incidents is significant. It is a rare case in which the patient succumbs to his first infection. In the developing case the patient has had, before, many a cold that dragged on until it affected the general health. He has often had a cough that was of no importance. He has run down from overwork, or become nervous and anemic on slight occasion. Life insurance companies find that a history of the slightest spitting of blood is important even after years of health.

Third on the list let us place the physical signs. They demand something of natural endowment but more of previous practice. Any man who examines every suspicious chest and many normal ones with care and thorough system will soon get satisfactory results, even though his ear for pitch be poor and his tactile sense but moderate. With senses sharpened by much work with normal or only slightly diseased chests, what signs shall we look for? Dullness, increased fremitus or voice conduction, high-pitched or bronchovesicular expiration, cog-wheel respiration, fine crackling râles, whether bronchial or pleural,—any of these is of importance if heard over a limited area which remains the same from day to day. If you can by the use of the iodids develop a storm of moist râles in this area, and in this area only, the fact itself is almost a demonstration of tubercle and moreover the sputum so produced, though but serous, is apt to show bacilli. It is to be said that slight signs of consolidation weigh much less heavily if located at the right apex, since the normal difference against this apex is often exaggerated in a perfectly healthy subject.

All the functional heart murmurs, but especially the sub-clavian, occur with notable frequency in the tuberculous.

Lastly there is a word I must say, for I believe it the truth, though I know it is a view hopelessly old fashioned and that this meeting will be against me on it, as nearly unanimous as a medical body ever gets. Every bacterial disease is the harvest of a vegetable crop. Every crop depends upon two factors,—the soil and the seed. Some seeds like those of Canada thistle and of syphilis will grow wherever they obtain entrance. For mushrooms and mildew no amount of seed sowing will be effective unless the soil is exactly right. Towards which end of the scale does the bacillus of Koch stand? In the laboratory we grow it with great difficulty only by preparing with special care a few very special media. All the clinical evidence, as I read it, points to the conclusion that in the body it remains the same fastidious germ. Certainly our efforts to attack the disease have ended in most disastrous failure; in rendering the soil unfit, we have had the most gratifying and unexpected success. The lamp that Koch lighted, floods the question of infection with a dazzling glare; the question of predisposition remains yet too much in the shadow.

I believe there is a tuberculous diathesis. Able men have failed in the attempt to accurately set forth its stigmata. But I believe it can yet be recognized. The expert can with marvelous precision say this stranger has tubercles and that one has none. But the family physician can better pick among his own people those who will or may become tuberculous. If so the diagnosis of actual infection becomes of no importance. One third of our patients are underfed, over one half are under aired. Some of these will become tuberculous; all of them would be benefited in body and mind by anti-tuberculotic regimen. Why deny them this benefit while we search for a purely academic certainty? When the best we can do is to strengthen our natural defenses, why stand idle to ascertain certainly if the enemy has already gained a foothold?

ROENTGEN DIAGNOSIS IN TUBERCULOSIS.

BY RUSSELL H. BOGGS, M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, February 19, 1907.)

It was early recognized that the Röntgen rays are a valuable aid in the diagnosis of tuberculosis both of the lungs and of the bones. The Röntgen rays give us another method of learning whether or not the lungs are in an abnormal condition, and thus diminish the chance of overlooking pulmonary tuberculosis in the early stage. Many observers have shown that tuberculosis can be diagnosed earlier, at least in some cases, by the Röntgen rays than by any other method that we now possess. Besides assisting in making a diagnosis, they are a valuable method of recording the lesions in the various stages of the disease. They thus enable the physician to determine the effects of the therapeutic agents employed.

Dr. Judson A. Daland states that no chest examination is complete without an *x*-ray examination. When the Röntgen rays were first used for diagnostic purposes the apparatus was inefficient, the operator was unable to produce uniform plates, and the radiographs did not attain the same standard as those that are made to-day. Again the physicians were unable to interpret the normal and the abnormal shadows. The manufacturers made enthusiastic claims and attempted to give the idea that all that was necessary to make a Röntgen diagnosis was to purchase an outfit. Skill is required both in the preparation and in the interpretation of the radiograph. This can be obtained only by daily practice. Again the ability to read the negative depends upon the physician's knowledge of general medicine. This is the reason that Röntgen diagnosis should not be made by any one except a practitioner of medicine. The use of the fluoroscope is of some service in the study of the chest, but on account of its inaccuracy and the dangers to the operator, the radiographic method certainly should be adopted. While Röntgen diagnoses have been made almost ever since the discovery of these rays, the actual progress dates from the beginning of short exposures. In order to gain much information of the lungs from the x-ray plate, it is absolutely necessary to make the radiograph while the lungs are at rest, and, of course, the picture must be taken in a few seconds while the patient holds his breath. Usually tuberculous patients are emaciated and a plate can be fully exposed in from one to five seconds and then there is no difficulty in keeping the patient still. It is usually advisable to make one radiograph with the plate posterior to the patient and another with the plate anterior to the patient, as the nearer the lesion is to the plate the more distinctly it is shown. In the interpretation of chest negatives, it is important to know the position of the target of the tube with reference to the area exposed. It is always important when making a radiograph to have the patient place his hands above his head in order that the scapulæ may be drawn as far away from the pulmonary area as possible. Also it is very important (if the patient is a female) that the mammary glands be drawn away from one another as far as possible when the patient is placed on the plate.

As before stated, the interpretation is the most important part of the work, and this can be accurately done only after the operator has become familiar with the normal shadows and is able to determine the shadows cast by the abnormal densities. In a normal radiograph of the chest, first to be observed are three vertical zones,—one light in the center caused by the heart and mediastinal contents, and two dark, one on each side of the light area, caused by the less dense lung tissue. The pulmonary zones are crossed by the ribs and in many radiographs the structure of the bone can be seen. On close examination the mottling caused by the lung structure is observed.

In all radiographs taken while the lungs are at rest, the diaphragm and upper border of the liver are shown. In considering the objects presented, we note first the line of the diaphragm. It is usually higher on the right side than on the left in the normal chest. In cases of thickening of the pleura the line of the diaphragm will almost be lost on the affected side. In the normal chest we find a number of white lines branching out from both sides of the medium line at about the level of the third rib and far more prominent on the right side. These shadows are cast by the small pulmonary vessels. Tubercles in the lung cast small white shadows on the plate varying in size and shape, and are sufficiently characteristic to be diagnosed. Tubercular glands, especially if they have been the seat of calcareous changes, show very plainly and can be recognized when less than one eighth inch in diameter. Tubercular glands, when calcareous, can be diagnosed by the x-ray in the kidney and bladder. Calcareous glands along the line of the ureter or in the bladder have been taken for calculi. Usually when a patient has a large mass of glands in the neck, a radiograph will show that there are tubercles in the lung on the affected side.

Old scars or fibrous tissue will cast a shadow but not so distinctly as that of calcareous glands. The consolidations vary in their densities, size and shape.

Cavities one half inch in diameter can be shown on the plate. They are recognized by a darker spot which is surrounded by a light area caused by consolidation.

To illustrate the above, I will report the following cases:—

Case 1. Miss A., aged thirty-two, was referred for the treatment of cervical adenitis and as she was coughing I made a radiograph of the chest and found the glands were enlarged. Examination of the sputum revealed tubercle bacilli.

Case 2. Mr. B., aged twenty-six, had lost in weight and had been coughing off and on for six weeks. An examination of the sputum showed tubercle bacilli, but no physical signs were present. A radiograph of the chest showed a number of small glands larger than normal. Five weeks later a diagnosis of pulmonary tuberculosis was made from the physical signs.

Case 3. Mrs. M., aged sixty, contracted bronchitis last August and later a diagnosis of pulmonary tuberculosis was made from the physical signs. The patient had a rise of temperature and was confined to the bed for six weeks. Repeated examination of the sputum by a leading pathologist was negative. It was four months from the onset of the disease before the tubercle bacilli were found in the sputum. This is rather unusual and would lead one to doubt the microscopical examination, if the work had not been done by a competent pathologist. A radiograph was then taken and lesions were found in both lungs. The point to be emphasized is, had a radiograph been taken at the onset of the disease, a definite diagnosis would undoubtedly have been made and the patient could have had the benefit of a better climate.

Case 4. Mr. G., aged twenty-eight, was referred for an examination of renal calculi, and small calcareous deposits were found in the left kidney and bladder. A consultation was held and the sputum which was examined revealed tubercle bacilli. Attention should be called to the fact that these calcareous deposits in the urinary tract should suggest the possibility of pulmonary tuberculosis, and the chest should have been examined and a diagnosis been made before the consultation was held.

Case 5. Mrs. L., aged forty-five, was referred for an examination of renal calculi. The radiograph showed six deposits in the right kidney, one being almost as large as a grain of corn. The patient was operated upon but as no physical signs were present it was not until after the operation that a diagnosis of pulmonary tuberculosis was made. A radiograph would likely have shown calcified glands in the chest. The last two cases were examined several years ago.

The clinical signs of tuberculosis of the bone (as well as of pulmonary tuberculosis, with which it is so often associated) are not as a rule well marked, and as recovery depends upon the early diagnosis and the institution of proper treatment, it would seem almost imperative that a radiograph of every suspected case should be taken early. In the later cases, although a diagnosis is easily made by the ordinary clinical methods, a radiograph gives accurate knowledge of the amount of destruction, which can be obtained in no other way. In studying radiographs of tuberculous diseases of the long bones, atrophy at the epiphyseal ends is always found to a greater or less extent. This is produced by the deficiency of calcareous deposits and is easily recognized. As tuberculosis of a joint progresses, the smooth surfaces lose their regularity and appear ragged and cloudy, the cortex is often partially destroyed and gives the appearance of having been bitten off.

When the destruction is extensive, texture of the bone, medullary canal and cartilaginous tissues are destroyed. The value of the rays in the early differential diagnosis of tuberculosis, rheumatism, arthritis deformans, dislocation, and fracture, can not be too strongly emphasized.

ADMINISTRATIVE CONTROL OF TUBERCULOSIS.

BY J. W. EDWARDS, M. D.,
Superintendent of Bureau of Health,
Pittsburg.

(Read before the Allegheny County Medical Society, February 19, 1907.)

The organized struggle of society with transmissible disease began a century ago with vaccination. Following this, other transmissible diseases have been placed in the category of those which should come under state control, and at present it is recognized that it is the province of the state to institute measures for the prevention and control of practically all transmissible diseases.

It has been only within comparatively recent years that systematic efforts have been made to control tuberculosis by classing it among the reportable diseases.

It is recognized that it is possible and necessary to wage a winning fight against tuberculosis. This recognition has not been with the profession alone, but also with the laity. Concerning no other disease has there been such an awakening on the part of the intelligent classes of the people. This has made possible the progress made within the last few years in the control of the disease in certain localities. Tuberculosis interests the great masses of the people as does no other disease because there are few individuals indeed who have not seen some one dear to them by ties of blood or of friendship called away by this disease; and the gospel of fresh air, as taught by Trudeau in the Adirondacks and by the progressive family physician at home, has come with a message of hope to homes where formerly hung the shadow of hopelessness and despair.

Upon the medical profession will rest the greater burden of responsibility for advancing measures of prevention as well as for the treatment of the tuberculous patient who comes to them. The physician treats his smallpox or diphtheria patient, not only from the point of view of the patient individually, but also from the point of view of the public health by instituting preventive measures regarding others. For tuberculosis also the same principles should be carried out. It should be treated from its public aspect as well as from that of the individual case.

In any crusade against the disease the various forces must coöperate, the profession, the laity and the state as represented by the local health bureau. The health bureau should be the directing force. Its duty is to coördinate the various lines of work.

The following outline of measures to be adopted in the administrative control of tuberculosis is presented. They are measures which are being employed in other localities where systematic organization has been effected.

1. Registration of all cases.
2. The supervision of all patients not regularly under the care of physicians.
3. The establishment of dispensaries as a base from which all indigent patients and those not under supervision elsewhere can be kept under observation.
4. The disinfection of all infected houses.
5. The provision of hospitals for the isolation of advanced cases, such as can not be properly treated at home, and of sanatoriums for the treatment of curable cases.
6. The enforcement of public measures which directly influence the occurrence of the disease, such as anti-expectoration ordinances, prevention of dust, overcrowding in factories and tenements.
7. The education of the people in the knowledge that tuberculosis can be prevented and can be controlled.

REGISTRATION.

The first requisite for the control of tuberculosis by the authorities is the registration of all cases. The problem must be known before it can be solved. The regulations of the Board of Health of this state make the report of cases of tuberculosis by the physician compulsory. Aside from being required by law, this is a duty which the physician owes to the public by virtue of the fact that it is his province to prevent as well as to cure disease.

The register of cases should be kept solely for the information of the bureau and should not be open to the public. If this be done the objection on the part of the patient would be overcome, as reporting the case would not mean publicity. In case the physician reports the patient as being under his supervision and the health authorities are satisfied that he has given the patient proper instructions and that the conditions are not such as to endanger those in his immediate surroundings, they would take no further action in the matter. By this plan neither the physician nor the family would be subjected to any interference on the part of the health inspector.

When there is not a constant supervision by the physician, however, and he does not make himself responsible for the spread of the infection, then the health authorities should take upon themselves the care and education of the patient and his family and the changes in his surroundings necessary to protect those about him.

If this system be carried out, there can be no valid objections to reporting cases, either on the part of the physician or of the patients themselves.

DISINFECTION OF INFECTED HOUSES.

This is an important part of the work of the health authorities. This is especially true of the houses in the poorer districts. The poor consumptive changes his abode frequently by force of circumstances. Sickness of the wage earner or one of his family leads him to seek other and cheaper quarters. He moves from one house to another leaving behind a trail of infection; for, among this class, especially in the tenements, but little cleaning or renovating is done before the next tenant moves in. All houses vacated either by the removal or the death of a tuberculous patient should be thoroughly disinfected before subsequent occupation is permitted.

THE TUBERCULOSIS DISPENSARY.

Properly managed, this should become the most important factor in an organization for the control of tuberculosis. Through the dispensary the majority of unreported cases (those not under the care of a physician) will be brought to light. Many of these will be of the floating element, those who go from one physician to another, and for the most part are those without means. It is this class that can best be reached in this way.

To serve its purpose effectually it must be well organized and equipped and be known throughout the community as a place where the poor consumptive can be examined and receive treatment. The dispensary, however, must do more than make diagnoses and furnish treatment. It must follow the cases to their homes and there show the patient how to institute curative measures for himself and teach him how to avoid infecting others. It must investigate the home conditions and instruct other members of the household in practical measures of prophylaxis, must help them to make their surroundings hygienic. Other members of the family who may be tuberculous should be induced to come to the dispensary for treatment and examination. This work in the homes can best be done by a trained nurse attached to the dispensary. The utmost tact is necessary. The inspector must gain the confidence of the people and impress them with the belief that the object is to help them to improve their condition. Every one is jealous of his private rights and would resent any officious interference. Women are best fitted for this work and a conservative, well trained nurse would be able to bring about results where the uninformed inspector would fail.

The work outlined could be done with a very moderate outlay. The ideal dispensary, however, would have a larger scope. It would be prepared to supply indigent cases with proper nourishment and other necessary material aid.

In a city the size of Pittsburg several dispensaries should be maintained after the system is developed. The bureau of health, if not actually maintaining all of these, should at least be in close touch with them and work through them in order that a uniform system of supervision could be maintained and that all might be placed under one administrative control.

HOSPITALS AND SANATORIUMS.

Hospitals for advanced cases serve the purpose of prevention by removing the case in its most dangerous period and prevent further infection in the home and in the community. Sufficient hospital accommodations should be provided for all advanced cases that can not be properly cared for in their homes. It should be possible to isolate in a hospital all patients who either by dense ignorance or wilful neglect do not carry out the necessary preventive measures in their homes or in public.

Sanatoriums, by taking care of the incipient cases, will protect the public by lessening the number of advanced cases in the future. The hospitals for advanced cases, the sanatoriums for incipient cases, and the dispensary supplement each other and should have one administrative guidance. Admittance to institutions should be through the central dispensary or through a central board. The problem should be considered as a whole and the means at hand should be utilized to the best advantage. If the means were limited, as will be the case for years to come, such an organization would know which cases could best be treated at home and which should receive institutional treatment.

The enforcement of anti-expectoration laws must be carried out by the authorities. By prohibiting the habit of promiscuous spitting in public places an important source of infection would be diminished. Improved methods of sweeping streets, correcting defective drainage, preventing overcrowding, cleaning filthy premises, and other measures for improving the standard of living, help to solve the problem of prevention.

THE EDUCATION OF THE PUBLIC.

No complete organization for the prevention of tuberculosis will be possible until the public is made to realize that tuberculosis is a disease that can be prevented and can be controlled. All classes must be taught what the conditions actually are and what remedies are needed. This could best be carried out by an organized committee by means of lectures, publications and by popular exhibitions. Time will not permit to give in detail the various measures to be used. In educating the public it is necessary to impress the facts, first, that tuberculosis is a preventable disease; secondly, that it is curable in a large proportion of cases if treatment is begun early; thirdly, that preventive measures are effective if properly carried out. It is important that the measures to be used as educative be sane and temperate in order that they may not injure the status of the consumptive. The laity should understand that the consumptive is not dangerous except when he refuses to follow advice as to prophylactic measures.

Average deaths from pulmonary tuberculosis in American cities for five years beginning 1900, per 100,000, given in the order of mortality from tuberculosis are as follows:—

1.	San Francisco	285.0
2.	Baltimore	233.6
3.	Cincinnati	230.5
4.	New York	224.4
5.	Boston	220.3
6.	Philadelphia	215.5
7.	St. Louis	195.4
8.	Chicago	156.5
9.	Pittsburg	137.5
10.	Cleveland	125.6
11.	Buffalo	119.9

Deaths from pulmonary tuberculosis in Pittsburg in 1905 were 440; in 1906, 419.

DISCUSSION.

Dr. J. I. Johnston said that we should and do appreciate the value of the earliest possible diagnosis of tuberculosis. This can often be done before the bacilli appear in the sputum, bacilli being confirmatory evidence as stated. The demonstration of peribronchial lymph glands by x-ray picture is probably possible early and might be used.

Tuberculin also, in selected and doubtful cases, might be considered. The use of the clinical thermometer by the patients with careful diurnal, or even hourly records, for a week or ten days' time gives valuable data for early diagnosis.

The irregular curve as mentioned by the essayist, whether down below or up above the normal line, is strongly suggestive. Taken after exercise, or during the menstrual period of women, it points to valuable information of tubercular pathology.

The use of potassium iodid to stir up signs in a suspected area is to be condemned and deserves mention as a personal disagreement from the writer. The careful study, from time to time, of a small suspected area in the chest may materially influence an opinion whether such signs persist or disappear.

One is rather tempted to subscribe to the existence of a tuberculous diathesis.

Hemoptysis is almost positive evidence of tuberculosis of the lung, provided no cardiac lesion is present; like typhoid fever early in the disease, when we can not make a positive diagnosis, suspected cases of pulmonary tuberculosis should be considered such until disproved. While the suitable soil spoken of seems necessary, we must never forget that any one may develop the disease.

Dr. J. D. Heard spoke of the importance of taking temperature at intervals of two or three hours. We may have a temperature rise in a very brief period as in a case personally observed where the temperature was 99½ to 100 degrees at three P. M., daily, and at no other time.

Scales and thermometer are more important than physical examination in earliest form.

Constantly present râles in one limited area may be due occasionally to deep respiration causing the filling of collapsed vesicles as in a case personally observed over long period.

The fact that in Dr. Bogg's case bacilli did not appear for four months, is not remarkable. Average time is three and one half months after beginning, as shown by history.

It is almost a truism that favorable soil is the most important element in infection since all are exposed.

Dr. B.M. Dickinson said it seems to him Pittsburg is to be congratulated on having for its superintendent of the Bureau of Health an energetic able physician, and Dr. Edwards deserves the sympathy and coöperation of every member of this society.

Certainly if the Bureau of Health is to take charge of tuberculosis as it does of other infectious diseases it must have reports of infective cases. The word of Dr. Edwards is sufficient guarantee that this report will be regarded as confidential and not open to the public. This is important, as patients are very reluctant to have their cases reported and some even refuse to allow the examination of the sputum since the law requires the physician to report all cases of which he has knowledge.

As to additional regulations against spitting in the cars and on the street, Dr. Edwards deserves the support of every physician and good citizen. The street car company should be made responsible for the enforcement of the law against spitting in the cars; when the company is made subject to fine for running a car with sputum on its floor the danger of infection from street cars will be at an end. Under the present plan it is nobody's business to enforce the law with the result that the law is a dead letter.

Dr. Edwards' plan of employing trained nurses as inspectors is a good one and will certainly aid in controlling the disease by the best means at our command; namely, the education of the afflicted ones.

Dr. Litchfield called attention to Dr. Flick's little book, "Consumption a Curable and Preventable Disease," recently published for the laity, strongly urging all members of the society to get it and read it for pleasure as well as profit. Dr. Flick emphasizes two points particularly, both pregnant with practical suggestions for all of us; first, that consumption is a house disease, requiring a considerable period to create a contagious environment, and a much longer exposure than is commonly supposed to secure a fertile implantation; and, secondly, that the modern treatment of rest, fresh air, and diet, can be carried out anywhere. In other words, poor patients can be cured in Pittsburg as Pratt is curing them in Boston, on roofs and fire escapes.

Dr. Litchfield said further that it is not easy to diagnose tuberculosis in the early stages. Skill increases with study and experience, and the specialist in tuberculosis can often find things that the general practitioner does not suspect. The question of hereditary predisposition to tuberculosis, and whether or not a person should be allowed to marry after having had this disease, opens up the vast subject of immunity which is still under investigation and dispute. Certain it is, that races that have never been exposed to tuberculosis, whatever their condition of general physical health, succumb more quickly to this disease than races that have long been exposed to it. Dr. Litchfield does not approve of the use of iodid of potassium for the purpose of diagnosis.

Dr. T. G. Simonton said we are fortunate in having a man of such high integrity as Dr. Edwards at the head of the Department of the Bureau of Health, and should lend any aid and encouragement possible to help him in the good work he is doing along this line.

The new state law requires the prompt reporting of all contagious cases and all births; and, while this is most essential, the state authorities owe it to the profession to see that the clerical office force does not furnish to the advertising agencies the names of persons suffering from contagious diseases or the report of births, as they in turn resell them to the proprietary manufacturer to be used for sending personal letters and samples of their products to the patients and parents of the infant.

Dr. H. C. Westervelt spoke of the advisability of exercising care in the selection of a thermometer for use of the patient, cheap instruments being unreliable and apt to lead to erroneous conclusions; also that such patients should be weighed not only at proper intervals, but with attention as to clothing to insure accuracy of comparison. He also spoke of the anorexia in incipient tuberculosis and emphasized the frequency of nausea in these cases. As a further aid to early diagnosis, the red blood count was urged as important, very grave anemia being thus revealed early in the process.

Reports of County Societies.

BUCKS—February.

The winter quarterly meeting of the Bucks County Medical Society was held at Newtown, February 13, with the president, Dr. J. B. Carrell, in the chair. Members present: Drs. Bassett, Carrell, Cooper, Crewett, Erdman, Eves, Foulke, Hannum, Myers, Parker, Pownall, Seibert, Smith, Swartzlander, Walter, Wilson, and visitors, Rev. T. J. Elms and Prof. Jay F. Schamberg.

Drs. Francis F. Borzell (Jeff., '06), Cressman; Morris P. Boyle (U. P., '98), Glenside, and Curtis Clyde Eves (Medico-Chi., '05), George School, were elected to active membership.

Dr. Carrell, as a member of the committee on state hospital for inebriates, presented a series of preambles and resolutions, concerning the establishing of inebriate hospitals, that was adopted.

In view of the efforts being made to repeal the vaccination laws of this state, the chair appointed Drs. Hannum, Crewett and Walter, as a committee to prepare a resolution embodying the confidence and sentiment of the profession with reference to the efficacy of vaccination and to impress the laity with the importance of urging our legislators to oppose the repealing of the existing vaccination laws. A resolution from the Philadelphia County Medical Society, with reference to the vaccination laws, was read for concurrence and by a motion adopted.

A preamble and resolution from the Northampton County Medical Society relating to and condemning the rule of exorbitant charges for services of the trained nurses of the Lehigh Valley, was presented for concurrence. After a free discussion the resolution was adopted.

Dr. F. B. Swartzlander presented the subject of medical fees, lodge practice, etc., for consideration. A free discussion followed. It was decided to make life insurance fees a special feature for the meeting in May. Many impromptu remarks were offered on various topics. Interest in the entire proceedings of the session was apparent.

At the special hour, Prof. Jay F. Schamberg of Philadelphia, delivered an excellent address upon the various exanthemata, with special reference to diagnosis. The lecture was finely illustrated with lantern slides, operated by Rev. Elms. All present manifested a marked interest in the lecture.

Anthony F. Myers, Reporter.

CHESTER—March.

A regular meeting of the Chester County Medical Society was held in Coatesville, March 12, at 2 p. m., with the president, Dr. C. E. Woodward, in the chair. The following were present: Drs. Baugh, Carpenter, Catanach, Farrell, Maxwell, Pennell, Reel, H. A. Rothrock, Scott, Spratt, Swing, Jackson Taylor, Williams, and Woodward.

Papers were read by Dr. A. W. Baugh on "Cheyne-Stokes Breathing," and Dr. H. Y. Pennell, on "Treatment of Malignant Disease by the X-ray."

Dr. N. G. Catanach reported a case of miscarriage in twin pregnancy in which a period of about three months intervened between the expulsion of the first and second fetuses. H. Y. Pennell, Reporter.

COLUMBIA—February, March.

The Columbia County Medical Society met at Berwick, February 12, with twenty members present.

The society adopted the following resolutions:—

Resolved, That the resolutions passed by the Philadelphia County Medical Society in reference to proposed antivaccination laws represent the sense of this society, and that a set of similar resolutions be prepared by the committee on legislation and be forwarded to our assemblyman and state senator.

Resolved, That we, the members of the Columbia County Medical Society, reaffirm our belief in the efficiency of vaccination as a preventive of smallpox and wish most earnestly to protest against the repeal of the laws providing for the vaccination of all persons of a school age before their admission to the public schools.

Resolved, That this society endorses the One Board Bill governing the practice of medicine, and refers this matter to the committee on legislation for aggressive action.

On motion of Dr. Reagan which was enthusiastically seconded by nearly every man present, Dr. L. B. Kline of Catawissa was unanimously endorsed as a candidate for president of the state medical society.

C. A. Small, Esq., our district attorney, who was an invited guest of the society, favored us with a very practical address on medicolegal subjects, at the close of which he answered many pertinent questions.

Dr. E. L. Davis then read an instructive paper on "Intestinal Indigestion" which was followed by a helpful paper on "Catarrh of the Stomach" by Dr. C. F. Altmiller.

A regular meeting of the Columbia County Medical Society was held in Bloomsburg, March 12. After routine business was transacted, Dr. J. J. Brown read a practical paper on "Diagnosis of Eye Diseases Simulating Conjunctivitis." Dr. J. S. John read a paper on "Movable Kidney."

J. R. Montgomery, Secretary.

DELAWARE—January, February.

The annual meeting of the Delaware County Medical Society was held, January 10, at 3:30 p. m., in the parlors of the Hotel Imperial, Chester.

Following the business meeting, Dr. L. Webster Fox, professor of ophthalmology at the Medico-Chirurgical College, delivered a practical address on "Diseases of the Eye." Dr. Meeker, a chemist from the same college, also gave a short talk.

Dr. Forwood, the newly elected president, made some remarks in which he thanked the physicians for their kindness in electing him to the presidency of the society.

Dr. Fussell, the secretary, who was elected for the thirty-fifth time, was complimented on his thoroughness and efficiency. The society feels it is due him that he have an assistant and Dr. Stitler was appointed to fill that position.

Following the meeting, the physicians repaired to the banquet hall and enjoyed a roast pig dinner.

The regular meeting of the Delaware County Medical Society was held at Chester Hospital on Thursday, February 7, with President Forwood presiding.

Dr. Thomas C. Stellwagon, Jr., gave a demonstration of the methods employed in catheterizing the uterus.

The society instructed the committee on legislation to draft a resolution protesting against the repeal of the compulsory vaccination law.

The matter regarding the establishment of a state hospital for inebriates was referred to the committee on legislation.

The last matter of importance considered was the bill before the legislature in reference to the state board of medical examiners. It was moved and seconded that the matter be referred to the committee on legislation and that the committee be instructed to use all its influence to secure the passage of the bill at the present session of the legislature.

Meeting adjourned until March 7.

ELLEN E. BROWN, Reporter.

ELK—FEBRUARY, MARCH.

The regular meeting of the Elk County Medical Society was held February 14, at the New Hide, Ridgway.

Members present were Drs. Wilson, Livingston, Mullhaupt, Flynn, Earley, Corbett, Rankin, Heilman, Scott, Davis, Bavier, Leitzell and McAllister.

Dr. Leitzell read a paper on "La Grippe" and covered the ground very thoroughly. There are no specifics in the treatment. Symptoms must be met as they develop. Special stress was laid upon the importance of quiet and rest in bed until recovery. The secretions should be looked after. The paper was discussed by the various members present. Owing to the lateness of the hour, the topic for discussion was not taken up.

Much of the meeting was taken up in the discussion of the proposed new medical legislation.

The Elk County Medical Society met at the Armstrong, at Johnsonburg, March 14. The members present were Drs. Bavier, Corbett, Heilman, Leitzell, Mullhaupt, Palmer, Sharp and Wilson. Vice-president Leitzell presided.

The committee on legislation reported having sent out a number of letters, endorsing the Bowman Bill, to the various members of the society requesting the members to sign them themselves and get petitions from influential business men of the community, and forward the same to our representatives at Harrisburg.

Dr. Palmer opened the discussion on "Pericarditis." No person present had seen a case of idiopathic pericarditis and it was regarded as a somewhat rare affection, but not infrequent when associated with some other disease or as a sequela of some other affection or a result of traumatism. The subject was further discussed by Drs. Bavier, Mullhaupt, Livingston, Heilman and Leitzell.

Dr. Livingston brought up the subject of "Hypodermic Anesthesia" by the use of the much talked of hyoscin-morphin-cactin formula. The discussion of this subject was informal, those present having had but a limited experience with it, but with what experience they had had, reported favorably of this method.

Dr. Mullhaupt introduced the matter of the use of the mercuric zinc phoresis in the removal of growths, especially malignant ones, and gave an extended and instructive talk on the subject, which was further discussed by various members.

The society adjourned to meet at St. Marys, the second Thursday in April, at 1 P. M. J. C. MCALLISTER, Reporter.

ERIE—MARCH.

The regular monthly meeting of the Erie County Medical Society was held in the assembly rooms of the Public Library on Tuesday evening, March 5, with Dr. Ray in the chair. The members present were Drs. Boughton, Dasher, Dennis, Goeltz, Kalb, Lefever, Reed, Reinoehl, Ross, Schlindwein, Schrade, Schmelter, C. G. and D. H. Strickland, Walsh, and Woods.

The society through its secretary has urged the representatives from this district to support the Bowman Bill now pending at this session of the state legislature, and the members individually have also written to Harrisburg asking the support of the bill.

Upon the favorable report of the censors, Dr. William B. Washabaugh was declared a member of the society. An application for membership from Dr. J. S. Irwin, was received and referred to the censors.

Upon motion, Dr. C. G. Strickland was appointed assistant librarian for the coming year.

Dr. Kalb, one of the members of the committee appointed by the society to confer with the organization having in charge the coming industrial exhibit to be held in this city in April, reported that they have arranged to have several lectures delivered by physicians on subjects of great public interest.

Dr. Ross offered an amendment to the rules of the society, which, if adopted, will not compel new members to pay for a full year's dues, if the application is received and accepted during the last three months of the calendar year, but that such payment will be accepted as payment for dues beginning from the following New Year.

Dr. J. W. Wright, the city health officer, intended to address the members in reference to the advisability of appointing twelve members of the medical profession to act as school inspectors, to serve as volunteers for several years until the results would demonstrate to the city officials the necessity of making the positions permanent. Dr. Dennis approved of the idea of school inspection. He believes it is a great benefit to the community in preventing epidemics, and that the question must be faced sooner or later. It has been adopted in many of the larger cities of our own country, and is a regular feature in the regulation of schools in foreign countries and has been of great economic advantage. Dr. D. H. Strickland thought it might be well to consider the question of coöperation with the School Board and, if possible, avoid antagonism to the project by the members of that body. Dr. Reed, a member of the Board of Health, said that the present laws of the commonwealth invest the members of that board with full power to make school inspection as the indications may require and that the jurisdiction is not vested in the School Board. No definite action was taken on this matter as it was deemed best to give it more consideration.

By request, Dr. Francis A. Goeltz read the report of a "Successful Anterior Thoracobronchotomy for a Foreign Body Impacted in the Bronchus" which is published in the March issue of the *Annals of Surgery*. The operation by the anterior route has been performed only a few times, and has distinct advantages over the posterior route. A preliminary low tracheotomy was performed and attempts made to extract the body by that route, without success, but by this means the operator was able to definitely localize the button. Chloroform was administered through the tracheotomy wound. The importance of the tracheotomy wound in locating the foreign body was emphasized and tracheotomy recommended in any case where the body is situated below the bifurcation of the trachea. It was suggested that operative interference should not be delayed for more than forty-eight hours.

Dr. C. G. Strickland reported a case of chronic acetanilid poisoning from absorption, in which the drug was used as a dusting powder for a chronic leg ulcer. The case was in the service of Dr. Albert Hand, Jr., at the Methodist Hospital, Philadelphia. The patient had previously been admitted to the Pennsylvania Hospital with the diagnosis of gallstones, and, after a short stay and the withdrawal of the drug from the wound area, the symptoms had gradually cleared up.

At the time of her admission to the Methodist Hospital the diagnosis had been made of gastroenteritis. The quantity of acetanilid used was a half pound weekly, for a period of more than six months and there was no craving manifested by the patient after the drug was discontinued. There was marked cyanosis, headache, nausea and vomiting, dyspnea, palpitation, yawning, insomnia, slight jaundice, cyanosis of extremities, and pain over splenic region. Paramidophenol was found in the urine but disappeared three days after admission to hospital. On account of the chocolate color of the blood, hemoglobin estimate could not be made, but there was a high grade, secondary anemia. Respirations at one time rose to 80.

In discussing the papers, Dr. D. H. Strickland complimented Dr. Goeltz on the successful termination of the case and thought if a careful x-ray examination had been made it might have aided in establishing the exact location of the button without the preliminary tracheotomy, and would have enabled the operator to perform the operation in less time and with less danger to the patient.

Dr. Reed also congratulated Dr. Goeltz on the success of his case and spoke of a recent occurrence in his own practice. A young man was tossing a dime in the air and in some manner it became lodged in the respiratory tract. The laryngoscope revealed nothing, but the peculiar sound made by the coin could be heard on inspiration and expiration. He placed the patient on his surgical chair, inverted the position and then had him make several efforts at forced coughing when he was relieved to find the coin expelled from the mouth.

Dr. Boughton, who had examined Dr. Goeltz's patient with the fluoroscope, said that it was impossible to rely upon the results of such examination and that in all cases it would be necessary to make a skiagraphic plate. He related his experience with a case of supposed swallowing of a dental plate, in which the fluoroscope showed almost positively that the plate had lodged in the esophagus. He recollected the experience of Dr. Crile and decided to convince himself by examining the same region of a friend, when he was surprised to find that he also had the same shadow under the fluoroscope, due to the presence of the hyoid bone.

Dr. Kalb spoke of the disastrous results from the use of acetanilid in his early years of practice. He worked in the coal regions and found it necessary to carry a large supply of medicines on his house visits. He was called to see a child suffering from intertrigo in the folds of the neck and made up a dusting powder of bismuth, sodium bicarbonate and small quantity of acetanilid. He dusted some of the mixture on the child's skin and before he had closed his case the child had a convulsion and died. He could not say whether the death was caused by the acetanilid, but he has never used the drug as a dusting powder in children since that time.

Dr. Dennis had no comment to make on the papers read, but thought it might be a good idea to extend the discussion on the free use of proprietary headache powders, which are taken on the responsibility of the patients. He has notes of cases where he has seen blue lips and other signs of intoxication from these remedies.

Dr. C. G. Strickland recited a case in his father's practice. A man in the hospital on account of fracture was noted to have some blueness of his lips, and on one of his visits, while the patient was standing near a window with a colored glass, the discoloration of the lips was more striking and immediately recalled to his mind the case reported earlier in the evening. The man also had a cardiac murmur but the compensation was not impaired and after some effort Dr. Strickland induced the patient to hand him a box of Miles' pain pills which are supposed to contain two and a half grains of acetanilid. These had been taken by the patient as a tonic and he said that it was quite a common practice among the workmen to take them as a tonic; they certainly seemed to brace him up and Dr. Strickland thought there must be some craving after prolonged use and the formation of a habit which leaves an impression on the patient.

Dr. Goeltz, in reply to Dr. D. H. Strickland, said that there was no *x*-ray plate made of his patient because the parents of the child were positive that the collar button was made of bone, and not of metal, in which case the result would have been negative.

While this case is not in direct relation to the subjects of the papers, Dr. Kalb related a very interesting case in which he performed intubation. The patient, when first seen, was lying on the couch, making spasmodic movements but no respiration. The face was ashy in hue. Dr. Kalb thought he had arrived too late, but decided to proceed with the intubation. After the tube had been inserted he started artificial respiration and the child soon gave a few respirations. Before he left the house the patient was breathing regularly. That same evening he was again called to the house and found the child breathing very noisily, tossing about and very much excited. This time a larger tube was selected; the child was three and a half years of age, and a tube suitable for one of seven years was used. No trace of the first tube was found, although the finger was inserted beyond the epiglottis and in the pharynx and its disappearance is still a mystery to this day. Four days afterward the second tube was removed and the child made an uneventful recovery.

G. W. SCHLINDWEIN, Reporter.

FRANKLIN—FEBRUARY.

A special meeting of the Franklin County Medical Society was convened by Dr. Croft, the president, in the parlors of Hotel Montgomery at 1:30 P. M., February 5.

A letter which had been received from Dr. Dixon, relating to legislation, regarding vaccination in the present legislative session, was read. Resolutions were enacted endorsing the present law on vaccination and urging the legislature and especially the senator and members from this county to resist any efforts to lessen the utility of the present law.

The death of Dr. Benjamin Frantz, Waynesboro, was announced. Dr. A. H. Strickler moved that the Chair appoint a committee of three to draft and offer resolutions in memory of Dr. Frantz. Drs. Strickler, I. N. Snively and McLanahan were named as the committee, who later reported a series of resolutions which was passed.

Upon motion the committee on life insurance examinations was asked to report.

Dr. Strickler, a member of the committee, reported the following:—

At a meeting of the Medical Society of Franklin County held February 5, 1907, the following resolutions were unanimously adopted.

Resolved, That the following preamble and resolutions are adopted by this society in session at Chambersburg.

Whereas, Many of the life insurance companies have notified their medical examiners of reduction of examining fee from five dollars to three dollars; and

Whereas, We, as physicians, realizing the responsibility incident to proper examination of the individual, believe such reduction to be unjust; therefore, be it

Resolved, That the Medical Society of Franklin County and the medical profession in sympathy with them, in session assembled, do hereby declare such reduction to be unjust, and respectfully request that no physician legally authorized to practice medicine in Pennsylvania accept such reduction of fee; and further, that any physician accepting such reduction be guilty of a breach of professional courtesy.

Resolved, That it is the sense of this society that hereafter, in each examination for life insurance in which urine analysis is required, the minimum fee shall be five dollars.

Resolved, That the several component societies, forming the state society, be requested to adopt these resolutions.

Resolved, That the above rates shall not apply to industrial inspection, without urinary analysis, for amounts less than $1000.

Resolved, That no member of this society enter into any contract or agreement with any corporation, society, association, company or individual to examine applicants for insurance for any stated salary or lump sum, thereby evading the spirit and instinct of the foregoing resolutions.

Resolved, That the payment of all fees shall be authorized by the home office of the society or corporation to which such application is made, and under no circumstances shall an examiner receive or accept any part of this fee from an agent or any other person or corporation, unless the full fee be paid by authority of the home office.

Resolved, That each member of this society pledge himself or herself, in case a fellow member be removed from the position of examiner for any corporation or society solely because of this action of the medical profession, that he or she will not accept an appointment from such corporation or society as examiner, nor make any examination for same in Pennsylvania.

Resolved, That each member of this society bind himself or herself, by a pledge to be presented by him or her to the secretary, to abide by these resolutions.

Resolved, That these resolutions be printed in the PENNSYLVANIA MEDICAL JOURNAL and a copy forwarded to *The Journal of the American Medical Association.*

JOHN J. COFFMAN, Reporter.

LEHIGH—FEBRUARY.

The regular monthly meeting of the Lehigh County Medical Society was held in the Administration Building, Allentown, February 12, with the following members present: Drs. Bean, Boyer, Bleiler, Bruch, Butz, Cawley, Fetherolf, Guth, W. H. Hartzell, Henry, Herbst, Keim, King, Klotz, McAvoy, Mickley, M. G. Miller, Otto, H. H. Riegel, Ritter, Trexler, Wagner, Weaber, and Young.

After transacting the usual routine business, the law committee was authorized to look after the bill at present before the legislature, affecting the status of the regular profession of medicine in the state of Pennsylvania, and to use their best influence to protect its high standard.

A resolution was submitted to the society in reference to the graduate nurses fixing an arbitrary and invariable minimum rate of $25 a week for professional services. It was resolved that this society endorse the opinion of the Northampton County Society, that they in no way countenance such a high fixed and invariable rate of charges, and that its members will, in every possible and honorable way, resist and discourage this arbitrary, invariable, high fee rate.

The following resolution was also offered and unanimously adopted:—

Whereas, A bill has been introduced into the legislature of the State of Pennsylvania, whose purport is to weaken or abolish the provisions of the present vaccination law, therefore, be it

Resolved, That the president of the society be authorized to appoint a committee of seven members, including the president of this society, who shall coöperate with other individuals and bodies to maintain the integrity of the present vaccination statute.

Resolved, That the members of the Lehigh County Medical Society reaffirm their complete confidence in the protective value of vaccination against smallpox, and respectfully urge upon the legislative bodies of the state, and especially the members of said bodies from this county, to resist the efforts of those who would lessen the utility of the present vaccination law.

(Signed) W. H. Hartzell,
H. H. Herbst,
R. C. King,
H. H. Riegel,
N. C. E. Guth,
J. Treichler Butz,
P. O. Bleiler.

The following applications for membership were referred to the Board of Censors: Drs. Milton E. Weaver, Limeport, and Henry D. Jordan, Allentown.

The program for the day was opened with a paper on "Fractures of the Leg," by Dr. C. J. Otto. Particular stress was laid upon the fact that there is no set treatment for fractures of this kind, but that each fracture was to be treated specifically, being very seldom that two fractures happen to be of the same kind. There is no one line of apparatus for fractures of this kind, but splints are to be fitted, or plaster to be moulded to get the best apposition and union of bone. Different kinds of fractures were described, with particular attention to V-shaped fractures, on account of difficult union. Advised splints for fracture until swelling is reduced, then plaster for fixation. In the discussion, Dr. J. T. Butz gave a very interesting exhibition of *x*-ray plates of a number of fractures of the leg, which was thoroughly appreciated.

H. H. Herbst, Reporter.

LYCOMING—February

The regular monthly meeting of the Lycoming County Medical Society was held at the Williamsport Hospital on February 8 at 2 P. M.

The meeting was called to order by President H. G. McCormick and the following members were in attendance: Drs. J. W. Albright, Bell, Davis, Detwiler, Donaldson, Dougal, Drick, Everett, Gilmore, Glosser, Hardt, Harley, Hayes, A. P. and W. W. Hull, Konkle, Kunkle, Lamade, Lyon, McCormick, Metzger, Nutt, E. N. Ritter, Rote, Shaw, Stickel and Youngman. Visitors: Drs. Groff of Lewisburg, Bruner of Bloomsburg, Mervine of Hillsgrove, and Braucht of Spring Mills.

Dr. Detwiler, as chairman, submitted the report of the committee on the establishment of an open air sanatorium for the treatment of tuberculosis at Ellerton. The committee was continued.

Dr. Hayes exhibited a case of a child, five years old, with an abnormality of the second toe. This toe was larger at birth than the other toes, but owing to its abnormal blood supply is growing much faster than the other toes of the same foot. Dr. Hayes stated that he had had the case under observation for over a year.

Dr. H. J. Donaldson read an essay, "When Cases of Appendicitis Should Be Referred to the Surgeon."

Dr. G. D. Nutt discussed at length the diagnosis and differential diagnosis of appendicitis and reported a case of gangrenous appendicitis operated upon eighteen hours after onset of the attack.

Owing to the late hour, a surgical clinic by Dr. C. W. Youngman was deferred until the March meeting.

The society adjourned to meet the second Friday in March, 1907.

W. E. Delaney, Reporter.

MIFFLIN—March.

The regular meeting of the Mifflin County Medical Society was held at Lewistown, March 7, at the home of its newly elected president, Dr. H. W. Sweigart, who royally entertained the members.

Owing to the unavoidable absence of the member who was to read a paper on "Fractures of the Elbow Joint," this subject was informally discussed.

Dr. Achmuty of Lewistown and Dr. Bigelow of Belleville, two young physicians who have recently located in the county, were unanimously elected members of the society.

More substantial action was taken to add our little mite to the great effort now being made throughout the country to compel insurance companies to rescind their recent action in the matter and restore the old fee of $5.00 for medical examination for life insurance in all cases requiring a urinalysis.

The monthly meetings of our society are

always anticipated with feelings of pleasure, for we are sure to acquire some practical ideas and knowledge pertaining to our profession. The fraternal spirit is markedly increased.

WALTER H. PARCELS, Reporter.

MONTGOMERY—FEBRUARY.

The regular meeting of the Montgomery County Medical Society was held at Charity Hospital, Norristown, February 27, with the newly elected president, Dr. O. C. Heffner, in the chair.

The members in attendance were Drs. Beaver, Bostock, Buyers, P. H. Corson, Dill, J. L. D. and P. Y. Eisenberg, Heffner, Hunsberger, Mann, McCracken, McKenzie, Miller, Parker, Seiple, Sommer, Stein, Thomas, Umstad, Weaver, C. Z. and M. Y. Weber, and Whitcomb.

The meeting was called to order and the minutes of the last meeting were read and adopted.

Dr. Jay F. Schamberg of Philadelphia gave a most interesting illustrated lecture on "Diseases of the Skin," dwelling particularly on the cutaneous lesions of syphilis, and the differential diagnosis of this disease and others simulating it. After the lecture a vote of thanks was extended to Dr. Schamberg and the meeting was open for remarks.

The discussion was opened by Dr. M. Y. Weber, whose remarks were for the most part on erysipelas.

Dr. P. Y. Eisenberg, as chairman of the committee on legislation and public policy, presented resolutions indorsing the Bowman Bill and the compulsory vaccination law. These resolutions were adopted and sent to Harrisburg. The meeting then adjourned until March 29.

The annual banquet was held at "The Hamilton" on January 23. Covers were laid for thirty, and, notwithstanding the cold weather, a goodly number were present. Dr. Heffner acted as toastmaster, and a most pleasant evening was spent.

EDGAR STANLEY BUYERS, Reporter.

PHILADELPHIA—MARCH 27.

A stated meeting of the Philadelphia County Medical Society was held Wednesday, March 27, with the president, Dr. James B. Walker, in the chair.

"Trophoneurosis of the Hands Allied to Raynaud's Disease and to Erythromelalgia." Dr. A. Gordon exhibited a case resembling erythromelalgia and having some symptoms in common with Raynaud's disease. The condition was confined to the hands, which, in addition to the other symptoms, makes the case quite unusual. He discussed the pathogenesis of similar affections and concluded that between these two original types there are also intermediary forms.

"A Report of Three Fibromyomata of the Round Ligament in the Inguinal Canal, of Unusual Size." Dr. Barton Cooke Hirst and Dr. Norman L. Knipe reported three cases, each in the right inguinal canal, and each associated with the child bearing process which stimulated the unusual growth of the tumors. The differential diagnosis between these growths, inguinal hernia and enlarged lymphatic glands should easily be made. It is claimed that there is an absence of the symptoms of incarcerated hernia and that the situation is different from that of the large lymphatic glands.

Treatment consists in the removal of the tumors which show a remarkable tendency to sarcomatous degeneration (7 per cent.). The growth is a rare one, only forty-one being recorded and no one as yet having reported as many as three cases.

The operation for the removal of the tumors is a comparatively small one. The hemorrhage is inconsiderable, and the only complication to be feared is hernia from opening the inguinal canal. This can be prevented by closing the canal as in the operation for the radical cure of hernia.

Dr. Charles P. Noble thought Dr. Hirst's experience unique in having had three such cases. His own experience was limited to one, and, as in Dr. Hirst's cases, the growth had been very rapid during pregnancy. A smooth recovery followed operation.

Dr. B. Franklin Royer presented a paper on "Some Unusual Cases of Scarlet Fever."

In a paper on "The Question of the Infectivity of Scarlet Fever Scales," Dr. Jay F. Schamberg considered the available evidence upon this question which shows that there do not appear to be at hand any clinical facts which definitely prove the thrown-off cutaneous scales to contain the causative agent of the disease. There is ample evidence that the *contagium vivum* is not exclusively present in the desquamating epithelium, for scarlet fever is contagious before the beginning of scaling and may continue so for several weeks after the cessation thereof. Other considerations, strongly militating against the view that the infection resides at all in the exfoliated scales, were said to exist.

Regarding aërial infection, the general experience of scarlet fever hospitals shows that there is no increased danger to persons living in the neighborhood by reason of the atmospheric transmission of particulate dust carrying the infection. This is in direct contrast to the experience of smallpox hospitals. Reasoning by analogy from smallpox hospital experience, it is argued that if the scales of scarlet fever were infectious there would be an increased incidence of scarlet fever in the environs of scarlet fever hospitals. The general observation is that this is not the case.

The late infectivity of scarlet fever, it is suggested, may be explained by the infection lurking in localities other than the skin. General clinical experience would point to the secretions of the nose, ears and throat as lurking places of the scarlet fever infection. Experimental evidence was said to exist, strengthening this assumption and instances given.

The question of how long scarlatinal patients are to be isolated the writer says can not be categorically answered; cases must be treated in this respect upon their individual merit. The writer feels that the time has come when students should be taught that scarlet fever desquamation is not, within the knowledge of the profession, contagious, and that its continuance or cessation is not to be regarded as a criterion upon which to prolong or interrupt the patient's isolation; that the infection resides in the pharyngeal, nasal and aural secretions and that scarlatinal patients with discharges from these cavities must be isolated until such discharges cease.

R. Max Goepp, Reporter.

SCHUYLKILL—February, March.

The Schuylkill County Medical Society met in regular session at Park Hotel, Pottsville, February 5, with the following present: Drs. Corson, Fleming, Moore, Miller, and Santee.

The minutes were read and approved.

Dr. Corson read a paper entitled "Nasal Respiration and Its Relation to General Disease," which was a very comprehensive treatment of the subject. The doctor introduced the subject by a demonstration upon the human skull of the normal, anatomical relations of the structures forming the nasal cavities, and then described the several commoner diseases affecting the parts, laying particular stress upon their bearing on the general health and the importance of proper treatment.

The paper was discussed by the members present from a professional standpoint while Professor Thurlow spoke as a lay observer of these diseases in school children.

The business of the society, which had been suspended to give Professor Thurlow the opportunity of hearing Dr. Corson's paper, was then resumed and Dr. Constien of Ashland, whose application had been approved, was balloted for and he was unanimously elected a member of the society.

A communication from Dr. J. W. Ellenberger in reference to a bill to be introduced in the state legislature providing for an appropriation for a special hospital for inebriates, was presented and, upon motion of Dr. Corson, the secretary was instructed tc communicate the society's approval of this measure.

The following resolutions, presented by Dr. A. B. Fleming, were regularly adopted by the society:—

The Schuylkill County Medical Society in session assembled this fifth day of February, 1907, in the city of Pottsville, state of Pennsylvania, having had its attention directed to the laudable efforts of *The Ladies' Home Journal* in arousing public sentiment against the "Patent Medicine Industry" and more recently in their exposure of certain secular and religious newspapers of this country for aiding and abetting these evils by allowing their advertising columns to be filled by managers of said industries; be it hereby

Resolved, First, That the Schuylkill County Medical Society heartily approves of the stand taken by that excellent and aggressive publication and unite in wishing Mr. Edward W. Bok, its editor, continued success in fighting evils of all kinds, and especially those which prey on diseased minds and bodies, for their livelihood.

Second, That a copy of these resolutions be sent Mr. Bok, and another published in one of our local newspapers.

The following resolutions were also regularly adopted by the society:—

The Schuylkill County Medical Society in session assembled at Pottsville, this fifth day of February, 1907, having learned of a bill to be introduced in the present session of legislature to repeal our present vaccination law do hereby unanimously

Resolve, That we heartily protest against any change in the present vaccination laws of Pennsylvania and so put ourselves on record.

The Schuylkill County Medical Society met at Pottsville, Tuesday, March 5, with Dr. G. H. Moore, president, in the chair. The members present were Drs. Corson, Fleming, Lenker, Moore, Rogers, Santee and Taggart.

The minutes were read and with a few corrections suggested by Dr. Corson were approved.

Drs. Corson and Rogers moved that all papers hereafter read before the society should be handed to the secretary, for a record to be made upon the minutes of the salient points. The motion passed.

Dr. Lenker reported that in the absence of the other auditors he had made an individual audit of the secretary's and treasurer's books. Upon motion, Dr. Lenker's report was heard and accepted, whereupon the auditing committee was regularly discharged.

On motion by Drs. Corson and Fleming it was regularly enacted that there be appointed a committee, consisting of at least one member from each town of considerable size in the county, to be known as the Lookout Committee, whose duty should be the solicitation of new members and the stimulation of better attendance of the meetings of the society.

Dr. Rogers read a paper entitled "The General Practitioner" in which he deprecated the present tendency toward multispecialism and the disparity of fees between specialists and general practitioners. He took the stand that the general practitioner should be an all around good diagnostician, making use of the modern scientific methods of research in diagnosis; also a rational therapeutist by limiting his pharmacopeia to a vest pocket edition and invoking common sense hydro-, mechano- and electrotherapeutic measures. He maintained that the general physician should do all the minor surgery coming within his scope and be prepared to perform emergency major operations. He insisted that the practice of obstetrics should be eliminated from the ordinary duties of the general practitioner and relegated to a specialty.

The paper was discused by the members present and a vote of thanks rendered Dr. Rogers.

George O. O. Santee, Reporter.

WARREN—February.

The regular monthly meeting of the Warren County Medical Society was held at the State Hospital on February 12, and was called to order by the president, Dr. Ball.

Dr. Bennett reported two cases of premature menstruation in two sisters one at eight years, and the other at ten years of age, and also a case of appendicitis.

Dr. Hyer reported a case of typhoid fever, and Dr. Haines a case of suspected cancer of the intestines.

Dr. Ball gave the leading feature of a bill to be introduced into the legislature amending the law of 1893 regarding the practice of medicine. It was moved and seconded that the Warren County Medical Society favor the passage of this bill. A number of doctors promised to write to members of the legislature urging its passage.

Resolutions suggested by the action of the Philadelphia County Medical Society were adopted:

Whereas, a bill has been introduced into the legislature of the State of Pennsylvania whose purport is to weaken or abolish the provisions of the present vaccination act, therefore be it

Resolved, That the members of the Warren County Medical Society reaffirm their complete confidence in the protective value of vaccination against smallpox, and respectfully urge upon the legislative bodies of the state to resist the efforts of those who would lessen the utility of the present vaccination law.

Mary C. Conant, Reporter.

Old people should be allowed to sit up or get out of bed as soon after operation as possible in order to avoid postoperative lung complications.—*American Journal of Surgery*.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

VOL. X. No. 8. ATHENS, MAY, 1907. SUBSCRIPTION: $2.00 PER YEAR.

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Cyrus Lee Stevens, Athens.

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Surgery—John H. Gibbon, Chairman, 332 So. 15th St., Philadelphia. Charles P. Stahr, Sec'y, Lancaster.
Specialties—Lewis H. Taylor, 83 South Franklin St., Wilkes-Barre. Robert Milligan, Sec'y, Pittsburg.
Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association: President, William J. Mayo, Rochester, Minnesota; President elect, Joseph D. Bryant, New York; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago. Next Annual Session, Atlantic City, N. J., June 4-7, 1907.

Address.

CHAIRMAN'S ADDRESS.

BY W. L. ESTES, M. D.,
South Bethlehem.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

I thank you for the honor of presiding over the surgical section.

I feel it my duty strictly to enforce the rules with reference to the time allowance for each paper and discussion. Also, with permission of the section, I will enforce the rule that every promised reader must be ready with his paper at the proper time and in the order appointed; if, for some good reason, he can not be at the time or in the order appointed, his paper may be read when the other papers appointed for that particular session are finished, either by title or *in extenso* according to the time remaining for the session.

No miscellaneous paper will be received by the section in the absence of its author, nor shall any paper be entitled to the credit of having been read even by title before the section in the absence of the author unless all of the members present direct its reception and publication. As the lack of a paper in the symposium would make a break in the continuity of the discussion, when an author is unavoidably absent, but has sent his paper, this paper may be read in course by the secretary of the section. The Chair requests the kind support and active interest of all the members. The section belongs to the members and they are responsible for its success and usefulness; the officers can only organize and conduct the business for the members. Only prompt, punctual and steady attendance and keen interest will assure success and profit to the meetings.

Full discussions are especially desired and every member having anything to add is earnestly requested to take part in the discussions.

The division of the society into three distinct sections seems to be a move in the right direction. The delegation of all business matters to the House of Delegates gives much more time for the scientific work, and in order to use this time profitably it is certainly well to divide into designated sections where a member may find papers of the class which interests him most, and engage in discussing subjects which belong to his special work and taste. Desultory discussions are not so profitable as those of careful preparation and after serious thought. The Chair would suggest, therefore, that each year the proper committee be instructed to select a special subject or subjects for discussion and that members be invited to unite in a symposium for these discussions.

Furthermore, in order to make our special section of as much value and help to the profession in the state as possible,we should persistently and frequently, by papers, discussions, and counsel, call the attention of the general practitioner to certain definite and well-known facts concerning surgical ailments, in order to establish preventive measures for the betterment of social conditions which lead to surgical diseases, and for the early recognition of pathological states, so that proper surgical procedures may be employed in time to radically cure some of those which in their later states can not be cured.

Time will not permit extended mention of many nor full discussion of even a few of these conditions. Two diseases are so increasingly frequent and so hopelessly disastrous in their latest and worst conditions, and are so amenable to proper remedial measures in their earliest stages that the surgical section of the Medical Society of the State of Pennsylvania should earnestly enlist in a concerted effort to teach all that is known of the prevention and cure of these two maladies. I refer to syphilis and carcinoma.

Sociologists will probably never agree as to the best method of regulating the so-called ''social evil.'' Much may be done,however, and it seems to me the most important and efficient method of prevention is to educate people and communities as to the nature, virulence, and contagiousness of venereal diseases. One should preach the beauty of morality and the evil of continuing the differentiating code for the two sexes; that is, the almost universally received law that a man's moralities may be condoned but a woman's fall damns her forever. The possibility and beauty of chastity and the great evils of license and immorality should not only be advocated and urged by physicians but they should also sedulously exemplify in their own persons and lives the virtues they preach. Human beings are animals after all, and, notwithstanding the good that the earnest efforts of surgeons may accomplish in lessening immoral habits, there will still remain sinners and these will propagate diseases.

Our efforts of prevention then should be:—

1. In every grammar and high school

in the biological classes to teach the children the facts of sexuality, and the evils which result from perversion, intemperance, and unnatural license in the use of the sexual organs. Also teach them that venereal diseases may be innocently acquired, especially in using public drinking cups and public toilet furniture generally.

2. Propagate the doctrine of cleanliness, and the value of sterilizing frequently and at short intervals all public drinking cups, and table furniture.

3. Require all barbers, manicurists and masseurs, etc., to learn and to practice aseptic methods in their work.

4. Substitute for large roller towels, small individual cloths or towels in public houses and make it a penal offense to furnish soap in cakes at any hotel, in any car, or public washing place. Soap may be furnished in powder, or in liquid form in a receptacle which will prevent the hand even touching it, and never allow any portion once touched or used again to return to the common receptacle.

5. Teach people that all venereal diseases are amenable to treatment in their early stages and they may all be cured if they are taken in time; and urge physicians to handle with the utmost care and persistent seriousness all early lesions of syphilis and make people understand that these early lesions are just as contagious and every bit as noxious as leprosy.

The education necessary for the cure of cancer must also be towards prevention, as well as very early treatment. No matter what theory one adopts as to the actual nature of the propagating or determining cause of cancer, it is well known that many epithelial cancers (probably most of them) and sarcomata result from persistent irritation or repeated injury to the soft tissues. Epitheliomata of the tongue may be produced by the constant scratching or cutting of the sharp jagged edge of a tooth or some artificial dental apparatus in the mouth; the same sort of irritation may cause cancer of the lips or cheeks; immoderate use of a short stemmed pipe, or strong cigars may also produce cancer of the lips or pharynx. The frequent scratching or rubbing of a wart or mole on the face is apt to lead to an epithelioma, etc. In short, whenever there is a persistent and long continued irritation of the skin or mucous membrane, an epithelioma is apt to result. This is particularly true during the later years of life when degenerative changes are so especially apt to occur.

The all-important point is early removal of the source of irritation. Physicians should understand this and should teach their patients the vital importance of seeking advice for and having treated at once any persistent sore or ulcer anywhere on their surfaces or within their cavities.

The other point with reference to all cancers is that they may be cured if radically removed, and complete extirpation is rarely possible except in the very early stages. It is generally conceded now that in the very beginning there is a precancerous stage in tumors. If they be removed during this stage the patient may be cured.

In order, therefore, for surgeons to wage successful war against cancer, it is necessary for physicians generally to believe firmly: (1) That it is possible to cure a case of cancer. (2) In order to do this they must be radically removed (usually by the knife). (3) They can be cured by operation as a rule only in the early stages. (4) Every tumor should be recognized by careful and complete physical examination; that is to say, no physician should allow a case of suspected tumor to go on without carefully examining the patient and, if a tumor be found, a surgeon should at once be called in to remove it.

Surgeons must so impress the whole profession with the tremendous importance of preventive measures against these dread diseases that people will be stirred to a realization of the great good which will follow, and will inaugurate a crusade similar to that now waging against the sister disease, tuberculosis.

The judicious use and the assistance of the lay press will prove powerful auxiliaries in this movement of education. We should take advantage of these and bring every possible aid to help us propagate the facts which will lead to the saving of many lives.

Original Articles.

INJURIES OF THE THORACIC CAVITY.

BY GEORGE W. WAGONER, M. D.,
Johnstown.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In the consideration of injuries of the thoracic cavity we must take into account the damage that may be done by violence to the structures composing the walls of the thorax as well as the structures located in the thoracic cavity. This at once determines a subject containing so many elements that it will only be possible to sketch over it in the most rapid manner. The broadest division of the subject would be into:—

1. Injuries of the walls of the thorax, or external injuries.
2. Injuries of the contents of the thorax, or internal injuries.

External injuries include all the various kinds of wounds it is possible to inflict on the chest walls, incised, punctured, contused, gunshot, penetrating, nonpenetrating, infected, noninfected, fractures and dislocations of the ribs, sternum or costal cartilages and injuries resulting in the cutting, crushing or penetrating of the important blood vessels traversing the chest walls.

The general principles of surgical cleanliness, removal of destroyed tissue, enlargement and drainage, disinfection and rest apply to these wounds just as they apply to all other wounds.

Hemorrhage from the chest walls is not dangerous except when the internal mammary artery is cut by a stab or gunshot wound. The injured vessel must be speedily reached by resecting such costal cartilages as may be necessary to enable the operator to tie both ends of the cut artery. The intercostal vessels are rarely injured, each one being covered by the projecting border of the rib along which it courses. When one of these vessels is cut it is more easily and certainly reached for ligation by resecting an inch and a half of its rib.

Drainage is a point which should be somewhat strongly insisted upon. A wound in the chest fills the layman with fear and horror, particularly if the air is forced in and out with each inspiration and expiration. I have seen physicians who were also terrified by the sound. This trepidation resulted in the wound being plugged and sealed over before it had been properly inspected or cleansed, and the possibility of an infected pleural cavity thereby increased.

It is not my intention to describe the different injuries mentioned above or the treatment to be applied in each instance, but rather to emphasize some practical points which may be well worth remembering by those who are obliged to treat these injuries of the thorax and its contents outside a modern hospital.

Injuries of the thorax, when the organs contained within it are involved, are among the most serious that can befall man, but those involving the chest walls alone in the very great majority of cases are not dangerous to life.

The middle six ribs are the ones most frequently broken by violence; the upper three are protected by the clavicle and the thick layer of muscle; the lower three are quite movable and yield to pressure. Owing to their elasticity the ribs of children are rarely broken, while the injury is common past middle life.

There is rarely displacement in simple fracture of a rib. Manipulation is not necessary in the reduction of the fragments. Respiratory movements are usually sufficient.

It is a mistake to strap and bandage the entire thorax when the ribs are broken. A few strips of adhesive plaster reaching half way around the chest is all that is required. In the aged or when several ribs are fractured and crushed inward, the entire chest should never be bandaged because respiration is interfered with; the lungs fill up with fluid and the victim slowly dies of suffocation. Limited strapping over the fractured ribs, a semi-recumbent position in bed, and induced quiet if required will give the patient the best chance to recover. With few exceptions all patients with fractured ribs should be got on their feet as soon as possible so that danger of lung complications may be lessened.

It is unnecessary to confirm the diagnosis of fracture by securing crepitation at the cost of great pain. Treat as if fracture was certain. Simple fracture of ribs will unite without much deformity in the absence of all treatment, except rest. If the ribs are bent in to the lungs, it is quite improper to increase this pressure and possible injury to pleura and lungs by strapping. If it is probable the broken ends of the ribs are injuring the lungs and pleura, which would be indicated by the development of hemoptysis, hemothorax, pneumothorax or surgical emphysema, the parts of the ribs causing the damage should be resected, free drainage provided and antiseptic dressings applied. Strong antiseptic solutions should not be used in the pleural cavity because of the irritation and subsequent inflammation that may result.

Surgical emphysema, or air in the subcutaneous tissues, when occurring alone is rarely a dangerous condition and therefore need not cause anxiety. If it should embarrass respiration by invading the deep cellular tissue of the neck, proper punctures may be made through the skin to permit its escape.

Dislocation of the vertebral ends of the ribs can not be reduced. An injury that will cause dislocation of the ribs will cause death, and the condition is only likely to be discovered postmortem.

If the cartilages are dislocated from the sternum they can not be replaced except by exposing the cartilage, pulling it back into place or, failing, excise the dislocated end.

In fractures of the sternum, if the displacement is small it is best to leave it alone. If it is great enough to interfere with respiration by pressure, the fracture must be exposed, the ends pulled or pried into position and sutured.

Resection of parts of ribs leaves no weakness in the chest walls after recovery. Death may be speedily caused by the shock and collapse attending concussion of the chest. In this condition the contents of the thorax present no definite lesions on postmortem, but the force applied must have been sufficient to injure the vagus or sympathetic nerves or compress the heart.

It must be remembered that the shock following injuries of the chest and its contents is always severe and that it is not always prudent to use very vigorous means to counteract it, because during the depression severe internal hemorrhage may be stopped, which, under stimulation, might begin again and continue to a fatal termination. Under such conditions if the hemorrhage could not be definitely located it would be almost foolhardy to attempt by extensive operation to find and ligate the bleeding point. The patient would likely die during the exploratory excursion.

If a portion of the lung is forced through an external wound and is not severely injured, it should be carefully cleansed and replaced if possible, provided the case is seen before adhesions have formed between the surfaces of the pleura. If adhesions have occurred it can not be reduced. It may be carefully ligated and removed or allowed to slough off.

When traumatic empyema occurs after a penetrating wound the thorax should be opened by the excision of a portion of a rib and thoroughly drained.

The *x*-ray will locate bullets and opaque foreign bodies in the thoracic cavity when the possibility of removal will depend upon their location. Fragments of clothing can not be located in the above manner or in any other way than by enlarging the opening and carefully exploring the track of the wound until the foreign body is discovered or the operator is forced, by failure, to stop. Pulmonary abscess or empyema will gradually develop if the foreign body is not removed. These conditions must be treated by opening and drainage.

When the contents of the thoracic cavity are injured by fractured ribs or a crushing force, a condition of extreme danger results. The diaphragm may be ruptured allowing more or less of the abdominal contents to pass into the thoracic cavity and necessitating a laparotomy if the patient is to have any chance of recovery. If the lungs and pleura are extensively torn by the concussion there will be profound shock, severe hemoptysis, immobility of the injured side, blood and air in the pleural cavity, dullness over a large portion of the injured lung, shallow breathing accompanied by pain varying in severity with the respiratory effort. Slight injuries will present a much milder degree of the various symptoms, indicating little doubt of the recovery, but the severe injuries are immediately and extremely dangerous to life. If the critical emergency is tided over there are the subsequent dangers of pneumonia, infection of the extravasated material and empyema. It is still an undecided question whether or not the surgeon should open up the thorax and search for the bleeding vessels. If the bleeding comes from vessels in the lungs the search for them will be a hopeless one. If it comes from vessels in the chest walls it may be located and arrested, but it is just the uncertainty as to the source that creates the dilemma in which the surgeon is placed when he undertakes to decide if he shall open the chest walls or not. There is no rule to guide one. Probably one might say that in severe tearing injuries of the lungs and pleura, or the large vessels of the thorax, the problem is soon solved by the death of the patient, in the slighter injuries delay will create indications for operation for the relief of the results of the lesions.

Injuries of the pericardium and heart are very dangerous on account of the deadly shock which follows. Both of these organs can be readily reached and certain wounds successfully treated by surgical means. But such operations must necessarily be considered among the extraordinary feats of surgery and are therefore outside the realm of the ordinary practitioners.

FOREIGN BODIES IN THE LARYNX, WITH REPORT OF A CASE.

BY FRANK ALLEMAN, M. D.,
Lancaster.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The entrance of foreign bodies into the larynx or air passages below is an accident which, as a rule, is attended with the gravest danger. The bodies may enter during the act of mastication, deglutition or respiration, and may give rise to more or less grave symptoms, according to the character and location of the body.

Etiology. The bodies which may find lodgment in the air passages may be divided into fluid and solid. The fluids comprise articles of liquid food, the contents of abscesses in the tonsillar or retropharyngeal region, blood that may enter the larynx during surgical operations, and vomited matters. Abnormal or diseased conditions of the throat or larynx or esophagus act as predisposing factors toward the entrance into the larynx of extraneous substances.

It is difficult to enumerate the variety of solid bodies which may enter the air passages, comprising as they do, almost every known substance varying in size, consistency and shape. Such articles as pins, coins, particles of food, pebble stones, natural and artificial teeth, peas, beans, fragments of bone, nut-shells, marbles, lumbricoids, etc., may be mentioned as among the most common.

Children seem to be most susceptible to this accident as they occasionally fall asleep with foreign bodies, such as coins, buttons, candies, toys, etc., in the mouth. Thus, foreign bodies usually enter through the mouth, but instances are recorded in which a diseased bronchial gland has found its way into the lung or a bronchus. In the case herewith reported, the patient, a child of five years, while at play, insufflated a small soup bean into the trachea during the act of laughing.

Small bodies are usually expelled by coughing if they are not too large to pass the vocal cords. By insufflation, liquids and solids rarely pass beyond the larynx, except in laryngeal disease or paralysis, or in wounds of the mouth, cut throats and in unconsciousness of alcoholism or anesthesia.

Symptomatology. It is exceedingly rare that a foreign body of any size may enter the larynx or trachea without the knowledge of the individual. The symptoms of this condition may be considered as immediate, and secondary. Immediate, when due to obstruction by the foreign body and to spasm. Secondary, when due to the situation of the body, the changes it undergoes, and the degree of irritation to the surrounding tissues. In the very large majority of cases this accident makes itself known by the immediate development of symptoms of a most alarming nature. The patient is suddenly seized with choking or gasping for breath, with a feeling of impending suffocation. The dyspnea is usually of an inspiratory nature, the presence of the foreign body setting up a spasm of the larynx. There is great alarm with anxiety and restlessness. The eyes protrude, and in the severer cases, the face becomes congested from defective oxygenation. These symptoms may continue until death ensues, or at the end of a few minutes they may gradually subside and fairly normal respiration set in, with, however, a history of recurrence of these attacks, dependent either on the change in position of the patient or the altered location of the foreign body. If the body be angular, sharp or pointed, there will, as a rule, be symptoms of greater gravity than when the substance is smooth and unirritating.

Among the direct results of its presence we may enumerate, according to its character and location, laryngitis, edema of the larynx, abscess of the larynx, inflammation or ulceration of the trachea or bronchi, emphysema, pneumonia, pleurisy, abscess of the lungs, and necrosis of the cartilages, whether of the larynx or trachea. Hemorrhage may result, due to erosion of the mucous membrane by a movable body during respiration or an attempted ejection or removal by the surgeon. Cough, usually spasmodic in character, develops with occasional loss of voice. The cough may become croupy or resemble that of whooping cough.

The bronchitis which develops is peculiar in that it assumes somewhat of an intermittent type, the history of the case being characterized by recurrent exacerbations with intervals of comparative freedom. If the foreign body is located in the trachea or bronchi, the cough usually is accompanied with more or less mucopurulent expectoration, which is at times tinged with blood. The continued dyspnea, with gradually increasing manifestation of local inflammation, causes a rapidly progressive loss of strength and vital resistance, which of necessity, increases the gravity of the case and in turn indicates the demand for prompt and heroic treatment.

Diagnosis. As a rule, the diagnosis of the presence of a foreign body in the larynx or its continuation is not difficult. The history of the case ordinarily will establish the character of the accident; in the absence of any such history we have no means of definitely determining the presence of a foreign body in the air passages, except by the use of the x-rays, or in those cases in which its lodgment is in the larynx or trachea, when it can be brought under ocular inspection by the use of the laryngoscope. Digital exploration is, of course, only of value when the effect is in the pharynx or larynx. In locating a body that has passed into the bronchi, the anatomical structure of this locality should be borne in mind; and it should be remembered that more often the substance will find lodgment in the right bronchus or its bifurcation than in the left, because the right bronchus is located higher up than the left. Cohen has called attention to the fact that obstruction of the left bronchus causes an absence of respiratory murmur over the entire lung, while occlusion of the higher bronchus usually produces absence of the respiratory murmur over the lower lobe of that side, the division of the latter bronchus being nearer the bifurcation.

Prognosis. The presence of a foreign body in the air passages must be regarded as a most unfortunate and grave state of affairs, and presents a serious menace to life, either from immediate symptoms which arise, or from conditions which are liable to arise or develop secondarily in the air passages. Time does not permit the quoting of statistics as to the mortality of these eases before and after operation. The presence of a foreign body in the air passages is at once a most urgent surgical condition which demands prompt and heroic treatment. Delay is so often fatal that no excuse should be offered, on the part of the physician who first reaches the patient, for failure to call upon the services of a competent surgeon.

Treatment. Given a case of foreign body in the air passages, our first duty is to ascertain the character and location of the foreign substance. The history will often reveal its character while its location can usually be determined by the subjective symptoms, the extent of the dyspnea, the digital and laryngoscopic examination, and the use of the x-ray.

After the acute symptoms have subsided, should the dyspnea not abate, and seem to threaten life, operative interference should be resorted to without delay.

If, however, the symptoms are not urgent, an effort should be made to secure the expulsion of the foreign body through the natural passages. It is a dangerous practice to use emetics for the reason that they exaggerate voluntary efforts at expulsion and may result in the embedding in the structure of the air passages of irregular, angular, or sharp-edged bodies, thus rendering them more difficult and dangerous to remove than by safer methods.

The patient should be directed to take a slow, deliberate and full inhalation, after which he should forcibly exhale in the hope of dislodging the body. He should be aided in this by the physician adminstering powerful blows with the flat of the hand on the back of the chest. An additional aid to this procedure is to be found by placing the patient in an inverted position with the head hanging over the edge of a table or bed upon which he lies. In young children the patient may even be suspended in an inverted position held by the heels. When we have to deal with bodies of irregular shape and sharp edges, the danger of impaction must be kept in mind whatever manipulations are resorted to. In case of failure of the above methods, we should resort to the use of laryngeal forceps or the finger with the aid of the laryngoscope. Failing in this, recourse should be had to tracheotomy, the position of the operation depending on the location of the body.

In this connection it should be mentioned that under the relaxing influence of an anesthetic an effort should be made to dislodge and remove foreign bodies which are known to be lodged above the glottis.

After the performance of tracheotomy, the further manipulations necessary for the removal of a foreign body in the larynx will depend largely on its character and location. Should the body lie below the point of incision, it may be drawn down into the trachea or even into a bronchus by the sudden inhalation of air on opening the trachea. This should be borne in mind when attempt is made to reach the body by forceps through the tracheotomy wound.

When the trachea is laid open, it is not infrequent that the body is expelled immediately through the open wound or it may be forced up so near the opening as to enable the surgeon to seize it with the forceps. Failing in this it may be necessary to place the patient in the supine or inverted position, in order to dislodge the body and enable it to be forced up near the tracheal opening. If it be impossible at the time of the operation to locate the body, the edges of the trachea may be stitched to the integument and the wound left open for subsequent search or possible dislodgment.

Appended is the history of the case reported in connection with the subject under discussion.

History. M. W., a child, aged five years, while at play accidentally insufflated a small soup bean into the larynx during a fit of laughing. The accident occurred at five P. M., on December 23, 1903. The patient was at once taken to the family physician who adminstered some "powders," supposedly an emetic, which, however, failed to dislodge or aid in the ejection of the bean. A second attempt was made to secure ejection of the body the following day by the use of syrup of ipecac. This having failed, the child was brought to Lancaster General Hospital on the afternoon of December 24, about four P. M. When I first saw the child, at 4:30 P. M., shortly after she reached the hospital, she was breathing with much difficulty and had a hoarse spasmodic cough. The face was cyanosed and the expression was drawn and anxious. Dyspnea was marked and distinctly inspiratory in character, and the little patient begged for relief and willingly submitted to every effort made for her relief.

Both digital and laryngoscopic examinations proved negative. Auscultation over the trachea revealed the presence of the foreign body just below the vocal cords. The body could be heard flopping up and down with each respiratory effort. Numerous large mucous râles were audible and the raspy breathing indicated a congested and swollen condition of the laryngeal mucous lining.

The gravity of the symptoms indicated prompt and heroic measures and tracheotomy was at once resorted to. Upon opening the trachea, high tracheotomy was performed, the sudden and violent inhalation of air sucked the foreign body down into the trachea below the incision and nearly to the point of bifurcation. The dyspnea was at once relieved although while in the act of making the incision down to and through the tracheal rings, the little patient stopped breathing and became quite blue and pulseless.

After opening the trachea search was made for the foreign body and it was located just above the bifurcation. A long trachea forceps was introduced and passed down to the bean, which was with much difficulty grasped between the blades. A new difficulty arose when the swollen and macerated bean crumbled into several fragments under the pressure of the forceps. Piece after piece was removed and in a few minutes the breathing became free and the cyanosis disappeared.

A tracheotomy tube was inserted owing to the marked swelling of the tracheal mucous membrane. This tube was removed on the evening of the third day and the tracheal wound was practically healed by the eighth day.

The average amount standing to the credit of each account in the Post Office Savings Bank, England, at present is £15 5s. 4d.

ABSCESS OF THE LUNG.

BY WILLIAM L. RODMAN, M. D., LL. D.,
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Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The literature of abscess of the lung largely consists of isolated reports of occasional operators and is, therefore, wanting in authoritative statement. The number of good monographs is limited. Among the best are those of Tuffier, Eisendrath and Quincke; the two former having with great care collected and reported all accessible cases, and the latter given a classification so simple that it has been followed.

Etiology. In considering the causes of pulmonary abscess those of tuberculous origin are excluded at the onset. Abscesses may follow pneumonia, septic emboli, penetrating septic wounds, the aspiration of foreign substances (liquid and solid) by extension of suppurating foci, as from the neck above or subphrenic abscesses below, and, in rare instances, from suppuration of an echinococcus cyst. It is usual to find more than one pyogenic organism present even in those cases following acute croupous pneumonia.

The abscesses following pneumonias, other than those due to influenza, are single in eighty per cent. of the cases; whereas those resulting from influenza are frequently small and multiple. Those due to septic emboli are very generally so, as witnessed in pyemia, and are therefore not amenable to surgical treatment. The majority of the cases, thus far operated upon have followed croupous pneumonia. A comparatively few, strange as it may appear, have followed penetrating wounds accompanied, as they not infrequently are, by lodged bodies carrying in septic material.

Site. Eighty per cent. of the surgical pulmonary abscesses are found near the base, whereas the tubercular ones are generally found at the apex. This is an important fact, as spontaneous drainage of the former is exceedingly difficult; whereas it generally occurs in the latter. Therefore, the one is surgical, the other is not.

Classification. The simplest classification is that of Quincke, and, as it has been followed by a majority of writers in their compilations, its adoption is almost necessary if not wholly satisfactory. It is as follows: (1) Acute simple abscess; (2) acute gangrenous abscesses; (3) chronic simple abscesses with bronchiectasis; (4) chronic putrid abscesses with bronchiectasis. Although a differentiation between abscess and gangrene has been attempted, it must be admitted that it has frequently failed and the drawing of a sharp line between the two conditions is usually difficult, sometimes impossible. It may rarely be easy enough.

Diagnosis. The recognition of a pulmonary abscess which is quite practicable as a rule by the physical signs alone is greatly facilitated by the clinical history. Schlesinger of Vienna, in a masterly paper published two years ago, makes the weighty statement that when a pneumonia lasts more than nine days and is still characterized by high fever, we should at least suspect a suppurative complication.

A circumscribed area of dullness, with absent or impaired respiratory sounds, which remains after resolution and which is surrounded by normal pulmonary resonance, is particularly suggestive. If this area gives way to a clear note, after the patient raises a considerable quantity of pus which separates into the classic layers, to again become dull in the course of a few hours, the diagnosis is practically certain. The Röntgen ray may be of aid. When the abscess is full of pus it throws a shadow upon the plate; when empty this shadow is replaced by an area which is more transparent than the surrounding tissue. In one of the writer's cases the abscess was accurately located by Dr. George E. Pfahler before operation.

Amphoric breathing over the area of dullness is not proof of the presence of an abscess, since many internists state that this sign is frequently present in case of simple bronchiectasis where the dilated bronchial tubes are no larger than a lead pencil.

The general symptoms of pus formation may also be present; chilliness, sweating, fever and leukocytosis being usually marked. Our diagnosis should, however, go further than the simple determination of an abscess, since it is of the utmost importance to know whether pleural adhesions are present. We know such to have been the case in ninety per cent. of the cases operated upon; at least, they are so reported. In my judgment this is an outside margin, for in neither of the cases operated upon by myself were there adhesions. I do not see why there should be marked adhesions unless the periphery of the lung is involved.

The following points all speak for the presence of adhesions: The pulmonary resonance is the same in inspiration and expiration; the width of a given intercostal space is not changed by the respiratory movements; and, further, the affected half of the thorax is smaller than the other. Here the Röntgen ray is of more value than in the location of the abscess, since the use of the screen will demonstrate that the excursions of the diaphragm are limited during respiration, and that this muscle is constantly in the position of expiration.

Exploratory puncture should have no place whatever in the diagnosis, unless it is to be immediately followed by an open operation. To distinguish between an abscess and a bronchiectatic cavity it is important to remember that the microscope reveals elastic fibers in the sputum in the former condition while they are absent in the latter.

Before taking up the treatment of pulmonary abscess it will be well worth our time to consider the natural history of this affection and the natural method of recovery. Many internists tell us that these patients get well after the rupture of the abscess into a bronchial tube. This at first seems plausible, but a little reflection will show that this method demands careful and conscientious supervision, since such drainage is seldom sufficient or, as Rankin puts it, "sufficiently prompt."

If the surrounding lung tissue does not immediately recover, it melts away before an advancing ulceration, or nature temporarily arrests the process by splinting the abscess with a thick wall of granulating tissue. In the former instance surgery is imperatively demanded; in the latter it is almost as necessary, since the slow contraction of the abscess wall results in the dilatation of the surrounding bronchial tubes, and what was originally a simple abscess is now a chronic abscess, either simple or putrid, with bronchiectasis. This danger of bronchiectasis is not an imaginary one and should be considered in every case since it raises the mortality to a marked degree as is uniformly shown by statistics to be subsequently given.

Unfortunately there are no statistics referring to the medical treatment of pulmonary abscess. They are not hard to imagine, however, when we bear in mind the course of abscess elsewhere and the comparative ease with which lung tissue may be disintegrated.

Treatment. Rüdinger's statement made almost twenty years ago, that every pulmonary abscess demands operative interference, is extreme. Multiple abscesses should be let alone as they are as amenable to medical as surgical treatment. A few cases of simple abscess following pneumonia recover spontaneously by fortunate rupture into a bronchial tube. They should be watched carefully, however, and unless both the dullness and expectoration steadily diminish and the temperature coincidentally falls to normal, medical treatment, consisting as it does of antiseptic inhalations and tonics, should give way to surgical intervention. To delay longer is to invite dilatation of the surrounding bronchial tubes which seriously increases the risk. All surgeons are agreed that when an abscess has ruptured into the pleural cavity, operation is demanded. The same is true of all abscesses which have resulted from contiguous suppurating foci,—hepatic, gastric or cervical.

Operations for pulmonary abscesses following the aspiration of foreign bodies are particularly apt to be followed by pneumonia. It should not be forgotten that pneumonia frequently occurs in such cases without operation. Pneumonia rarely follows operation for other varieties of simple abscess.

The value of accurate localization of an abscess can not be overestimated as it both simplifies the operation and lessens the danger therefrom. The presence of nummular sputum should always lead to a careful examination since it usually indicates tuberculosis or bronchiectasis. Chronic abscesses with bronchiectasis give a distinctly less favorable prognosis than acute gangrenous cases.

Although a bronchiectatic cavity may diminish in size after drainage, the patient is injured rather than helped, since the contracting cavity produces traction upon the surrounding bronchial tubes causing them to dilate. The patient, moreover, has a permanent fistula.

Technic of Operation. Cocain, or local anesthesia, may be desirable in some instances. I, however, prefer general anesthesia and used chloroform very satisfactorily in both of my cases. It must be given guardedly, of course, by an experienced person.

Our aim in operating is to secure adequate drainage and obliteration of the abscess cavity. Resection of one or more ribs will always be necessary, the number varying with the accuracy of localization of the abscess. Usually the removal of a single rib suffices. If adhesions have not formed, careful suture of the parietal and visceral pleuræ should be done. In such circumstances I have found the suturing facilitated by resecting a second rib. It is difficult to work in a small, deep wound with the lung protruding and receding alternately. Unless there is careful suturing, the primary danger of pneumothorax, and the secondary one of sepsis, is increased. Gauze packing, with secondary puncture of the abscess within forty-eight hours, may be employed in lieu of suturing.

The lung tissue is cut through with knife or thermocautery, preferably the latter on account of its hemostatic and antiseptic effect. Puncture with trocar and cannula is objectionable inasmuch as it does not allow iodoform gauze packing subsequently.

Irrigation is not to be thought of; no more is free cureting of the cavity on account of the hemorrhage which may be excited thereby.

Eisendrath shows that eighty-five per cent. of the patients in the published cases recovered.

EMPYEMA IN CHILDREN.

BY JOHN H. JOPSON, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The etiology, pathology and diagnosis of empyema in children offer a rich field that has been especially investigated by medical writers. It is to the more strictly surgical attitude of the subject to which we would call your attention. With this view in mind, we have analyzed a series of forty-one cases upon which we have operated, the majority of them in our service at the Philadelphia Children's Hospital and described in connection therewith those points concerning the stage at which the disease was encountered, the technic employed, and the results obtained, which seemed to us of the greatest importance from a surgical standpoint. The patients ranged in age from ten months to thirteen years; two were under one year, eight between one and two years, one half were under four years, and nearly two thirds under six. There was slight predominance in the number of female over male children, fifty-eight per cent. of the former to forty-two per cent. of the latter. In a large majority of the cases, if not, indeed, in all, there was a history of pneumonia preceding the development of the empyema. This pneumonia was usually of an independent croupous form; in three or four cases it developed as a complication of scarlet fever and measles. In some cases it was still present at the time of operation; in others it preceded it by a number of days, weeks, or even months. When present at the time of operation pneumonia may be a formidable complication, or it may be relighted later in a crippled lung and bring about a fatal termination.

Empyema usually follows closely on the heels of pneumonia, and the pleural effusion rapidly becomes converted from a serous into a purulent collection; in some cases, indeed, it is difficult to distinguish between the two at the onset. It follows that when a considerable length of time has elapsed between the onset of the pneumonia and the detection of pus in the chest, one can usually assume that the collection has existed in the pleura for a correspondingly long period, and that the lung is probably bound down by more or less firm adhesions. A large proportion of both hospital and private cases unfortunately are of this class. Probably many cases perish with a pleural collection unrecognized. Certain it is that many are condemned to a tardy convalescence, to repeated operations, and some to permanent crippling of the lung and secondary deformities of the chest and spine through failure to recognize the empyema promptly or to institute the only proper treatment; namely, operation. In two of this series the duration of the condition was so long as to result in pointing of the collection in the usual site; namely, the anterior aspect of the chest near the nipple line, and in two or three other cases not included in this series we have been called upon to do secondary operations in the same class of cases of empyema necessitatis, previously drained by our colleagues. Secondary operations in this class of cases are of great frequency, and scarcely less so in those long-standing cases which only differ in the fact that the pus has not burrowed out through a favoring point in the chest wall.

The condition of the patients when presented for operation varied considerably. Some were still desperately ill with pneumonia; this is especially prone to be the case with very young children, in whom the mortality is highest. Others presented moderate fever, or normal temperature, were somewhat anemic and showed some loss of flesh, but had recovered from the initial illness and were not yet cachectic and exhausted by long-continued septic absorption; these constituted the favorable class. The neglected cases, usually undiagnosed for a considerable time, were much emaciated, very anemic, sometimes very feeble, and in one fatal case practically moribund at the time of operation. To this class belong the pointing cases already mentioned. Considering the duration of these cases and the condition in which the patients come to the surgeon, it is surprising how well they sometimes stand operative intervention if they have any recuperative power left, which is especially the case with the older children. In every such case, however, the convalescence is tedious and sometimes incomplete, owing to the lasting adhesions by which the lung is confined.

Nature of the Operations Performed. We believe that aspiration has no place in the treatment of empyema as a curative measure. Much discussion has taken place over the question of the comparative value of intercostal incision and rib resection in the treatment of empyema. In a number of our cases, especially those operated upon several years ago, we have been content to perform intercostal incision. At the present time, however, the decision of the majority of surgeons is in favor of rib resection, except in a few selected cases. Undoubtedly intercostal incision is sometimes a highly successful operation, but resection has certain unquestioned advantages. It affords much more room for exploration of the pleura, which is of prime importance in encysted collections, and permits of the evacuation of the masses of lymph which are frequently present, and which, if not removed at the time of operation, often cause clogging of the drainage tubes after a few days, or undergo slow decomposition, and furnish a good culture medium for infecting organisms. The close approximation of the ribs interferes with the use of large drainage tubes. Furthermore, the excision of a portion of the rib takes little more time than intercostal incision. Some pediatrists, like Koplik, advise against rib resection in infants under eighteen months, although we have not seen any contraindications to it on these grounds. Where the condition of the patient forbids even a transient or incomplete anesthesia, a simple incision should be practiced, and only exceptionally in other cases. In very sick children with large collections, preliminary aspiration, twenty-four hours before operation, is deemed advisable.

The steps of the operation as we have practiced it, consist in the administration of ether, after all preparations for operation and sterilization of the chest wall have been completed. The anesthetic is never pushed, and the operation is carried through with all possible speed. We always make it a rule to aspirate first with the hypodermic needle at the site of our proposed incision and demonstrate the presence of pus. The patient is turned slightly toward the sound side. We prefer an incision with its center on, or a little posterior to, the post-axillary line, and immediately over the eighth or ninth rib in unencysted collections; where the collection is encysted, the rib corresponding to its lower limit is chosen. The latissimus dorsi muscle will be encountered and partially divided. We have once or twice performed a ''muscle-splitting'' operation posterior to this point without transverse division of muscular fibers, the latissimus dorsi muscle being split at an angle to the skin wound, and the deeper incision made parallel to the skin incision. This requires a little more time and assistance than the ordinary incision, and has been practiced with the intention of lessening postoperative pain. When the rib is exposed, its periosteum is divided longitudinally, and a curved periosteal elevator used to clear the rib in its entire circumference. The periosteum and pleura are pushed downward under the rib with the same instrument and the rib divided with a pair of bone-cutting forceps, the anterior section being made first, and the divided rib being firmly elevated with sequestrum forceps while the posterior section is made. About an inch of the rib is removed in small children. The periosteum and pleura beneath are then punctured with a knife, and the opening enlarged by the finger or a blunt instrument. If pus is encountered the patient is turned to the affected side to facilitate its escape. The cavity is explored with the finger, and all masses of lymph cleared out with the aid of forceps. Two large drainage tubes are inserted into the most dependent portion of the cavity, and if there is much oozing of blood a wick of gauze is packed into the cavity. A large and thick dressing is then applied after any bleeding points which have been previously clamped have been ligated. A couple of stitches may be inserted in either end of the wound. The essential steps of the operation can be completed in a few minutes in uncomplicated cases. In encysted collections pus may not be found when the pleura is first opened, and the collection must be sought for by digital exploration and its surrounding adhesions broken through.

In a certain number of cases of the series, a small but important minority, the collection was encysted, in one being interlobar. Sometimes in spite of preliminary aspiration at the site of operation, the pleura will be opened beyond the limits of the encysted collection and it will be necessary to break through adhesions before the pus is reached. If the collection is posterior to and below the original incision it will then be advisable to make a counter opening between the ribs at the most dependent portion of the cavity or to resect a rib at this site. Careful search is always needed before deciding pus is not present in the pleura. In the case of interlobar empyema, pus had been detected by deep puncture and when the pleura was opened at the usual site no pus was found. Aspiration directly through the underlying lung again yielded pus, and along the needle an opening was made through the lower lobe of the lung into the cavity, as we would drain a pulmonary abscess.

No irrigation is used by us during or after operation. We believe irrigation is unnecessary, and often dangerous, except in a very few cases. In putrid empyema it may be advisable to use mild irrigation after a few days, but even here efficient drainage will usually render it unnecessary in children.

The after treatment consists in changing the dressings when saturated, usually twice in the first twenty-four hours, and after that at daily intervals, using all antiseptic precautions. The temperature usually falls to normal in three or four days if the drainage is efficient and no complications are present. Secondary elevations of temperature are usually indicative of deficient drainage, and the wound should be promptly investigated to exclude any pocketing of pus. Stimulation is often required after operation, strychnin and whisky being our favorite drugs, and the medical side of these cases needs careful supervision. We must remember, as it has been remarked, that it is a patient and not an empyema that we are treating, and much depends upon the after treatment.

The common complications in the postoperative period which we encountered were pneumonia, persistent or re-awakened, gastroenteritis, which may be violent or even fatal, and a condition resembling marasmus, but really a form of septic poisoning, usually associated with a pleural collection long overlooked or treated by palliative measures or insufficient drainage. It is marked by progressive weakness and emaciation. We have not found tuberculosis a common complication in children either in our own experience or in the reports of other surgeons.

Tubular drainage is maintained until the discharge has diminished sufficiently to drain by a gauze wick. One tube is first removed, and the other gradually shortened and finally dispensed with. This can sometimes be done in ten days; frequently a longer period is necessary. We are guided entirely by the amount of drainage. Closure of the sinus takes place more rapidly after rib resection than after intercostal incision.

Results. In forty-one cases of all types, primary and secondary, there were eight deaths, a mortality of 19.5 per cent. Excluding six cases of secondary operation in which there was no mortality, the percentage of deaths for acute cases was 22.8 per cent. Most of the fatal cases were in very young children, of two years or younger, the youngest fatal case being in a child of eleven months and the oldest five years of age. The youngest patient operated upon was ten months, a nursing babe, which recovered after rib resection. The causes of death were exhaustion, pneumonia, and sepsis. In one case the patient was practically moribund at the time of operation and died in a few hours. Another developed a fresh pneumonia and died ten days after operation; and still another died several months later after an attack of pneumonia in a crippled, airless and fibroid lung. Four were neglected cases of at least several weeks' standing, and in one the pus had ruptured into the bronchus. Four patients were in fair condition at the time of operation, and four were in bad condition, emaciated, exhausted, or in the acute stages of pneumonia or sepsis.

In our experience it seems that very young children with high fever, dyspnea and rapid pulse are much more unfavorable cases than older children with long-standing collections, but with a certain acquired resistance, often standing operation remarkably well. There would also seem to be a difference in the virulence of infection in different years, or, speaking broadly, in different epidemics, for the disease sometimes reaches that proportion in hospital cases. This observation has also been made by Scharlau, in his work in the Mt. Sinai Hospital. Five of our eight fatal cases were encountered in 1905, but in the present year we have had a series of ten cases without mortality. In large series of cases of empyema in children the mortality has ranged from 14.4 per cent. (Cotton) to 54 per cent. (Nathan—Baginsky's clinic).

Secondary Operations. In five of our own acute cases we were obliged to perform secondary operations. All but one were neglected cases, and in this one the primary collection was encysted, and there was apparently a secondary infection of the uninvolved portion of the pleural cavity. All of these were primary rib resections, except one in which Dr. LeConte had made a preliminary incision on account of the desperate condition of the patient. Four recovered, and one died later of pneumonia, probably septic, in the crippled lung. Of six secondary operations on patients primarily operated upon by other surgeons, all recovered from the operation. One child has been operated upon several times since in the Children's Hospital, and is a most pronounced type of high grade, primary and secondary deformity of the chest and spine. Two are known to have been cured, and the remainder were discharged from the hospital before complete healing, but were improving and were probably cured.

Resection of one or more ribs after the manner of Estlander has been the type of operation performed in these secondary cases. We have had no experience with the more severe operations of Schede, or Fowler-Delorme, in children. The latter operation of lung decortication has yielded good results in children in the hands of Dowd and others.

THE TREATMENT OF PLEURAL EFFUSIONS.

BY EDWARD MARTIN, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It has long been recognized that frank streptococcic empyemas such as occur complicating grip afford a better prognosis than do those latent serous effusions with symptoms so slight and noncharacteristic that they are not recognized till a more than ordinarily careful practitioner examines the chest in his efforts to discover the cause of a gradually failing condition of the health. Such latent pleural effusions are usually tuberculous in origin which in itself implies a persistence of causative lesions which does not hold true in regard to the pyogenic infections. An important factor in their resistance to treatment undoubtedly lies in the fact that because they have been long unrecognized and untreated there is opportunity given for a thickening of both the parietal and pulmonary pleura so great as materially to interfere with the ultimate expansion of the long compressed lung.

Each year's experience of carefully studied cases of pleural effusion strengthens the conclusion that pleuritis is nearly always secondary to infection or infiltration of the parietes or their contained viscera.

Pulmonitis is the usual primary cause. Osteomyelitis of either the vertebræ or ribs, or subphrenic or perinephric abscess not infrequently causes a pleural effusion which masks the original lesion. The same may be said of the pleural effusion symptomatic of malignant infiltration.

The bacterial and cytologic examination of the effusion has an important bearing on treatment since a pure pneumococcic infection may subside as a result of simple aspiration or even in the absence of this. Neither the streptococcic infections characterized by the presence of these bacteria and large percentage of polynuclear leukocytes, nor those which are tubercular, yielding a serum rich in lymphocytes and without germ contents, except as demonstrated by animal inoculation, can be expected to heal without continued drainage, and the treatment will be efficient in direct proportion to its timeliness and efficiency.

The diagnosis of pleural effusion is dependent almost entirely upon physical signs and exploratory puncture since the constitutional symptoms are masked by those of the lesions of which pleurisy is the consequence. These signs are usually definite and conclusive,—at times are misleading. The final test lies in the use of an exploring needle.

That the infection of a sterile effusion may be avoided and that the surgeon may be enabled by his tactile sense to determine when the point of the needle has entered the pleural cavity, the skin, at the seat of proposed puncture, should be anesthetized by one fifth per cent. solution of eucain and punctured to the subcutaneous fat by a sharp pointed cataract knife. This is accomplished by a quick jab. As much of the fluid as will flow, should then be withdrawn by attaching the needle to an aspirator; or, if it be of fairly large caliber, by slipping a rubber tube over its end and carrying the other extremity of the tube beneath the surface of an antiseptic or sterile solution contained in a vessel lying two or three feet below the level of the patient's chest.

If the effusion is germ free or contains only pneumococci, the evacuation may be repeated twice, pulmonary exercises being given in the meantime to encourage lung expansion providing the condition of the causal lung lesion permit of this. If the effusion is seropurulent or frankly purulent, continuous drainage is needful. This early in the case when the pus is thin and before marked thickening of the pleura has taken place, is best accomplished by syphon or suction drainage and under local anesthesia.

There is needed for this a trocar with a short cutting end, with cannula of a size as large as will go through the intercostal space, drainage tube which passes through this making an easy fit, and a short glass tube connection; a Wolf bottle is convenient but not needful.

The site of puncture having been selected, the sixth interspace in the mid-axillary line is the best in the absence of special indications, the skin is anesthetized and an incision three quarters of an inch long is made down to the intercostal muscle. The thickness of the thoracic wall having been determined by the exploring needle, the trocar with cannula, so guarded with a finger that it shall not penetrate to a greater depth than needful and with the cutting edges directed away from the position of the intercostal artery, is suddenly thrust into the pleural cavity. The trocar is withdrawn, the cannula being stopped with the thumb until the sterilized rubber tube can be passed through its lumen. This tube is so marked by a notch on its surface that the depth of its penetration can be gauged. The cannula is taken out leaving the rubber tube in place. This tube is kept clamped with forceps till the arrangements are completed for the syphon drainage. Over its end is slipped a two-inch square of rubber dam. By the help of the marking on the rubber drainage tube and the known thickness of the chest wall, the tube is so adjusted that its end lies just within the pleural cavity. In this position it is secured either by suture or safety pins. The skin wound is so stitched that it fits the tube, is covered by a small piece of gauze packing, the rubber dam is pressed close to the chest wall and is fastened thereto by straps of zinc oxid plaster, making thus an air-tight junction. To the end of the drainage tube there is attached by a glass junction a further length of tubing which leads down to beneath the surface of an antiseptic fluid. Since no air can enter it is obvious that, as the pleural contents escape, the lung must be drawn down to occupy the place filled by the fluid.

In cases of serous or thin purulent effusion without fibrinous flakes, this method is absolutely efficacious, providing the original focus of infection, usually in the lung, subsides. The patient, if his general condition permits this, should be up and about, the drainage tube then leading into a bottle hung from the waist to about the level of the knee. Each day the skin beneath the rubber should be washed with dilute alcohol. Though the constant suction action of the column of fluid in the drainage tube encourages expansion of the lungs, a more efficient means of accomplishing the end lies in the judicious use of respiratory exercises, particularly those which call for forced expiration against resistance. The blowing up of rubber balloons is particularly alluring to children and even adults find a charm in this procedure. Bottles so arranged that fluid is blown from one to the other offer perhaps the best means of pulmonary exercise.

The cure accomplished by this treatment is in appropriate cases rapid and complete, providing the drainage is efficient. It would probably be less rapid, and more troublesome but equally complete by any form of adequate open drainage, since suction is a help rather than an essential.

When, because the tube is blocked by granulation, thick pus, or fibrinous flakes, the drainage becomes inadequate, as shown by lessened or absent discharge and the constitutional symptoms of septic absorption, further efforts at suction drainage are futile. An inch of rib should be resected, preferably the sixth in the mid-axillary line, and an opening large enough to admit the finger for exploration and swabs and forceps for the removal of fibrinous deposits should be made. This operation may be done under local anesthesia but usually not to the satisfaction of the patient. It requires not more than two or three minutes for its completion. A knife, a couple of hemostats, a periosteal elevator and a costotome are all the instruments needed, though, if this be available, an engine saw or bone cutter will be found serviceable. Stripping of the periosteum is, as a rule, swiftly and readily accomplished. The pleural incision is placed above the intercostal artery and parallel to it. Through this the thick pus and fibrinous masses can be removed and within its lips can be placed drainage tubes of sufficient size to be efficient. The application of suction drainage in the cases requiring rib resection, though feasible, is of little value even when the water pump is employed, since the pleura is so infiltrated and thickened that the negative pressure will have little effect upon expansion. Providing the drainage be adequate, respiratory exercise will even in these cases cause complete obliteration of the cavity by bringing the costal and visceral pleura in contact.

The position of the patient in all operations for the drainage of pleural effusions is of major importance. By so turning him that the weight of the heart, mediastinum and exudate is thrown upon the healthy side, what before was a slight dyspnea may be converted into one not only distressing but immediately fatal. Therefore, the patient must be placed flat on his back or rolled a little to the affected side, the operation being made feasible by putting him partly over the edge of the table. The anesthetic of choice for both operations requiring rib resection and extensive resection of the chest wall is ether, given to its first stage in the former case.

In regard to the old empyemas with thick rigid walls and huge suppurating cavities, these can be prevented by early efficient drainage and pulmonary exercises. When they present themselves for treatment, subperiosteal resection of the ribs is of little avail. Extensive resection of the thoracic wall is the only treatment which promises a cure. This should usually be done serially, since these patients are ill prepared to withstand a single formidable operation. Decortication which promised much has not fulfilled expectations. It is attended by free bleeding and, even when the pyogenic investment is stripped off, the lung is not always expansile.

The successful practitioner must not despise book-keeping.

SURGERY OF THE THORACIC CAVITY.

BY JOHN C. O'DAY, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The success attained by abdominal surgery during the past few years might, indeed, be taken as an incentive for more research within the thoracic cavity. The light of modern surgery has been focused convergently upon the stomach till, now, the surgeon, with one sweep, is able to place his clamps upon the boundary lines of the metastatic bearing area, and successfully remove a pathologic process which, if allowed to remain, is attended with a grewsome mortality of one hundred per cent.

These results have caused the profession to become enthusiastic in its invasion of the peritoneal cavity. Research work has been carried on in the amphitheaters and laboratories of our universities for many years, but it remained for the Mayos, of a little town in Minnesota with a population of about thirty-five hundred, to gather the best that had been achieved by the various workers, and, by the collective knowledge thus attained, produce such happy results that the dignity of American surgery has been raised to a degree above that of any nation of the world.

In 1898, when Professor John B. Murphy delivered his oration on surgery before the forty-ninth annual meeting of the American Medical Association, he limited his remarks to surgery of the lung. The synthesis and analysis of his work were so complete many believed a new era in thoracic surgery had dawned. Sadly, little of his work grew into popular favor, but he succeeded beautifully in establishing lines along untrodden paths so that he who will, may take up the work and cast his own light beyond the rays of those he set to burning.

The conclusions upon which Murphy rested the propriety of collapsing the lung with nitrogen gas were the results of the most painstaking reasoning, and the profession owes to this master a debt of gratitude that should be voiced in the homes of many.

The blessings which often follow the procedure were impressed upon the writer in 1900, when a friend, Dr. P. Drayer of Hartford City, Indiana, havingbeen bedridden for months, the result of repeated pulmonary hemorrhage, suffered the collapsing of the bleeding lung. The operation was performed by the late Dr. Lemke, an associate and understudy of Professor Murphy. The hemorrhage was immediately arrested. The normal lung carried on the work of respiration without the least discomfort to the patient. Twelve days later the return of respiratory sounds were detected when the procedure was repeated and for the last time. Improvement was steady. The patient regained his usual strength, resumed his practice, and enjoyed several years of comfort and usefulness. Before leaving Indiana the doctor told me the first return of the hemorrhage would be an indication for the repetition of the procedure.

Although Professor Murphy mapped outlines that were clear, he regretted a lack of enthusiasm by the profession in dealing with the surgery of the chest. He said. "The profession at large has never entered into this field with the enthusiasm, persistency and energy with which it has invaded other fields, as the peritoneum, genitourinary, the osseous and nervous systems."

Surgery of the thorax, like that of the cranium and spinal canal, will never be attempted with any degree of enthusiasm. These regions are vital, and the surgeon has a fear of vital spots.

The feeling which led the great Greek materialist, Aristotle, to proclaim that the nerves were derived from the heart has not been entirely eradicated from the mind of man. We have but to consider the inscrutable effects of the emotions within the bosom to understand the abhorrence possessed by him in the contemplation of having this sacred cavity invaded by the knife of the surgeon.

The Cavity. The thoracic cavity is cone-shaped, closed above and below by diaphragms. The diaphragm which closes the apex of the cone closes "a small kidney-shaped orifice made up of the combined arches of the first ribs, the sternum in front and the spine behind" (Murphy). The diaphragm closing the base is really a partition between the thoracic and abdominal cavities. Through the superior diaphragm passes the large vessels of the neck, the trachea, esophagus, and nerves. This diaphragm has a respiratory excursion varying from one half to one and one half inches. The diagnostic value of this diaphragm was pointed out to Murphy. He says, "Its rise and fall with one respiratory act depends upon the respiratory effort and the condition of the respiratory organs moving most in health, and least, if at all, in apical disease."

The respiratory excursion of the greater diaphragm is likewise effected in intrathoracic diseases, and, while its vaulting into the cavity can not be watched with the same degree of precision and accuracy, it must be seriously considered else grave errors in operating may be made. It is divided into two almost equal parts; the superior and front part, corresponding to the position of the heart, is the highest and is practically stationary. It is on a level with the fourth interspace on the right side, with the sixth rib in the axillary line, and with the eighth rib in the scapular line and the body of the ninth dorsal vertebra. On the left side in the points mentioned it is five eighths of an inch lower. In health it varies from the third to the sixth interspace in its vaulting.

Longitudinally the thorax is divided into two cavities and one space; the two pleuræ and mediastinum. In single hoofed animals a communicating foramen is found between the two pleuræ where they come in contact in the anterior mediastinum. This opening is frequently found in the dog but rarely in the human subject, an apparent forethought of a wise Creator, for its absence enables the surgeon to invade one side without interfering with the function of the other. This was recognized by Hippocrates in the fourth century B. C. He opened the chest wall by resecting a rib to relieve pyothorax. He reasoned if a lung could be rendered functionless by a collection of pus, collapsing with atmospheric air could do no harm, and the method could be taken advantage of to invade pulmonary tissue for the drainage of bronchiectatic cavities. The work of Hippocrates remained in oblivion till 1584 when Schenk (Will Koch, History of Lung Surgery) reviewed the work and recommended the operation. Oblivion was its fate again until 1664 when Willis drew attention to the procedure. In 1670, Bligney reported a case of tubercular abscess cured by a sword thrust which allowed the pus to escape from the lung.

The mediastinum is the middle chamber of the thoracic cavity. It is a long, narrow space formed by the non-approximation of the two pleuræ. Above the level of the pericardium it is called the superior mediastinum, while below this line it is divided into an anterior, middle and posterior. This space is so complicated by the arrangement and character of its contents that one may reasonably expect little or no advance in the surgery of this region. Even were it possible to maintain perfect conditions of negative atmospheric pressure whereby this space could be opened with impunity, it would not be good practice to undertake but few operations. Abscesses of this region usually do best when left to point externally before opening. This may be facilitated by resecting a portion of the sternum or rib.

In February, 1904, Sauerbruch reported a means of excluding the injurious effect of pneumothorax in intrathoracic and mediastinal operations. His idea was to open the thorax under conditions of negative atmospheric pressure. So beginning with a small drum-shaped apparatus he steadily improved his technic until an operating chamber large enough to accommodate an operating table, surgeon and assistant was devised.

In the wall of the chamber on a plane with the top of the table an opening was provided through which the head of the patient projected. A rubber collar adjusted around the neck and flanged into the opening prevented ingress of air after the atmospheric pressure from within had been reduced. While Sauerbruch's experiments were most ingenious, his work has not given us all that was hoped for, as it was thought for a time the method would enable us to perform operations on the lower esophagus, and to deal with growths at the cardiac end of the stomach by drawing that organ up through the diaphragm into the mediastinum.

Wounds of the Pericardium and Heart. In wounds of the pericardium and heart, where the result has not been immediately fatal, the surgeon should not hesitate to open into the chest and prevent the pericardium from becoming overfilled with effused blood. Oblique, punctured or stab wounds of the ventricles tend of themselves to close. This may be readily understood when we consider how the contraction of the muscular wall against the intraventricular blood pressure would act as a compress, and prevent the escape of blood into the pericardium.

We must not be indifferent to the fact that a small amount of hemorrhage from a heart wound is capable of producing death by its accumulation in the pericardial sac, thereby causing an inhibition of the heart's action. In injuries of the precordia we should maintain a strict vigilance that the first indications of muffled heart sounds be detected, and lose no time opening into the thorax and arresting all hemorrhage either by suture or ligature. Wounds entering the auricle or those at right angle with the axis of the ventricle are immediately fatal.

Hemorrhage of the Internal Mammaries. Fatal hemorrhage from the internal mammary arteries has too often been the result of procrastination. The regularity of the course of this artery in the upper part of the chest close to the sternum enables one, with considerable exactness, to estimate a probability of its being wounded in a particular injury. The general signs of fluid accumulating in the pleural cavity and the gradual collapsing of the lung are seriously suggestive of the condition. These cases offer but one chance, and he who hesitates becomes a nerveless spectator to an untimely death. Murphy suggests placing a ligature upon the proximal side of the injury at the second intercostal space within a quarter of an inch of the sternum, but urges ligation *in loco* as hemorrhage from the vein, as well as the artery, is grave.

Wounds of the Lung. The lung may be injured by gunshot and stab wounds, penetration of pointed objects, and in fracture of the ribs. While the stab wounds are quite common they rarely show serious symptoms. Pneumothorax and hemoptysis are occasionally developed, but usually clear up in two or three days. If there be no adhesion between the parietal and visceral pleuræ, the lung is seldom injured in stab wounds unless the penetration is in the hilum or mesentery. Cleansing and sealing the external wound, and controlling the coughing by opium is the best treatment. It is a mistake to probe or explore these wounds. Surgical interference will be in time enough when signs of infection have shown themselves, unless slow and persistent hemorrhage is suspected. For the first twelve hours the surgeon should watch the patient, preparing meanwhile for any emergency which may arise.

In a case where a policeman received a gunshot wound penetrating the right lung, the writer believes his recovery was due to the administration of opium and aconite. Of course the hemothorax which immediately developed was no small factor in controlling the hemorrhage, but the reduction of the arterial pressure from the therapeutic slowing of the heart, to my mind, was productive of much good.

Empyema. Empyema of the thoracic cavity is so generally understood that mere reference to it will be made in this paper. Like appendicitis, the majority of the cases are not recognized until structural changes have taken place. It is pitiable, indeed, to be opening chests and, after removing quarts of pus, find the visceral pleura so thickened that reëxpansion of the lung is impossible. The stripping of this thickened pleura, although advocated by surgeons of repute, is regarded by the writer as a nonsurgical procedure.

Pulmonary Abscess. From the variance with which abscesses of the lung present themselves, the surgeon has been unable to attack them with any degree of precision. To locate a pus cavity in the lung is not always an easy task, and in multiple foci one is seriously handicapped in trying to establish drainage, for, should we succeed in opening into one of the cavities, no good would result unless communicating fistulas were present.

Pneumectomy. The high mortality which accompanies pneumectomy will discourage the surgeon in courting the procedure as he has the removal of other organs. However, pneumectomy has a field of usefulness, and should be considered when gangrene of the lung has begun to show itself. In the treatment of foreign bodies I wish to remind you of the assistance that may be procured by the *x*-ray, and also to remind you that in upward of sixty per cent. of the recorded cases the foreign substance was expelled after the patient had been suspended by the feet. "Many methods have been suggested for the primary treatment of these cases; one of the best is taking advantage of gravity early in the case, *i. e.*, holding the patient by the feet, requiring him to cough as deeply as possible, and slapping the chest forcibly at the time of expiration; this often forces the foreign body out of the bronchus" (Murphy).

DISCUSSION.

ON PAPERS OF DRS. WAGONER, ALLEMAN, RODMAN, JOPSON, MARTIN AND O'DAY.

Dr. John B. Roberts, Philadelphia: I think that the point made by Dr. Wagoner, viz, that, in cases of injuries of the chest, such as broken ribs, it is important to get the patient out of bed early, should be insisted on more than it is in order that there may be as little occasion as possible for the occurrence of hypostatic pneumonia.

I think that the statement made by Dr. O'Day, that a patient with a foreign body in the air passages should be inverted, is very erroneous. Immediately fatal asphyxia is liable to occur from spasm of the glottis due to the impact of the foreign body against its lower surface or impaction in the structures of the larynx. Inversion is very dangerous unless a tracheotomy has previously been done.

Dr. O'Day has referred to heart suture in Philadelphia. Dr. J. H. Gibbon of that city has operated on two patients, one of whom recovered. Dr. F. T. Stewart has operated on one that recovered and Dr. R. H. Harte on one that did not recover. I had one case of heart wound in which it did not seem necessary to suture. The patient died as the result of intercurrent pneumonia on the other side. Speaking of heart surgery, it seems to me that in some cases the differential diagnosis between pericardial effusion and dilatation should be made by an exploratory pericardiotomy.

I believe that many cases, perhaps most cases, of empyema can be operated upon with perfect satisfaction without general anesthesia. My own practice is, as a rule, not to resect the ribs. Ordinarily a long incision between the ribs, clearing out the pus and lymph, and a double drainage tube are all that is necessary. I emphasize this particularly where we have deterioration of strength and require a quick evacuation. Resection may be done later, if demanded. The suggestion made by Dr. Martin is one that I have never followed, but I have heard it recommended by others, and it seems to me clear that we ought to use that method more than we have done.

The other point that I want to lay stress upon is that in cases of traumatic pneumonia from gunshot or stab wound of the lung, I know of nothing that will give such great relief as the withdrawal of blood from the general circulation by venesection.

Dr. John H. Gibbon, Philadelphia: I have been particularly interested in the papers presented on the surgery of the chest. In the first place, the treatment of hemorrhage is one of every day interest to the surgeon, and one which calls for the most skillful surgical judgment. My own treatment of these cases is conservative unless the hemorrhage is sufficient to threaten life, and then I think that the mere production of a pneumothorax, as has been suggested by Dr. LeConte, will in many cases result in the arrest of the bleeding. If more is required, I think that the plan of Da Costa, of compressing the lung by regularly applied gauze packing, should be tried.

In regard to abscess of the lung, I believe the most difficult point we have to encounter is the localization of the abscess. If it can be localized, it is not hard to drain it, but my experience has been that the localization is no easy matter even for an expert medical man. I have operated upon one or two cases where the physical signs seemed to indicate an abscess in one part of the lung, and yet at operation it was found three or four inches above or below this point. The *x*-ray certainly is a help in this regard. The greatest guide to the localization of the abscess is the adhesion of the visceral pleura. When the chest is opened and no adhesions found, it is a great mistake to begin to explore for pus. My feeling is that a careful search should be made for adhesions, and if none are found, then the suspected area of lung should be brought to the wound in the chest wall and sutured and the exploration made later. If adhesions are found, a separate opening should be made at this point and the pus pocket drained through it.

Surgeons will probably always differ in the technic of operating for empyema. I have always advocated rib resection and practice it in every case excepting in very young infants and in empyema necessitatis. The youngest child I have operated upon was twelve months old; the operation was done with a local anesthetic and the child made a good recovery. In older children, and in adult life, I am convinced that rib resection is far better than simple incision. This resection should, of course, always be a subperiosteal one, which means that the pleural cavity is not opened until the section of the rib has been removed. In this way, there is absolutely no necessity for cutting the intercostal vessels, and if they should be cut the bleeding can be easily controlled. The preservation of the periosteum results in the regeneration of the rib, and after a time it is impossible to observe any defect in the contour of the rib.

Dr. Israel Cleaver, Reading: I have been much disappointed in not hearing the paper on gunshot wounds of the thoracic cavity. The subject is one in which I feel interested, because, in these days of peace, we do not meet them often. I hoped that the reader of that paper would describe the difference in the character of these wounds, consequent upon the different character of missile to-day from what I was accustomed to find in the sixties. It has not been my fortune to come upon any literature that particularly describes these differences. I should imagine, however, taking into consideration the kind of missile used in warfare at present, the puncture wounds of the thorax and especially the wounds of the lung tissue, that they would be less formidable and recovery more frequent than it was from the minie ball of which some few of us, perhaps, have a recollection.

In my limited experience, I have noticed the facility with which children stand operation for empyema and recover. I have also noticed that young surgeons coming from our schools and operating for empyema seem to pay no attention to the depth at which the drainage tube should be inserted in the cavity of the thorax. I think I have seen the condition prolonged by this. It is most likely due to faulty specific teaching on this point. If I may, I suggest to teachers that they lay a little more stress upon this subject.

Relative to the matter of rib resection versus incision as referred to by Dr. Roberts, I have noticed frequently that, where resection is not performed, we very often have an increase in the condition, for which resection is necessary afterward, and I am more in favor of primary rib resection than otherwise.

Dr. Gibbon, I believe, spoke of the presence of adhesions as a diagnostic point in cases of abscess. When I was a medical student, I remember the demonstrator of anatomy calling attention to the fact that so many cadavers showed the presence of pleuritic adhesions, which were thought to be the location of the adhesions caused simply by the little motion of the opposing pleural membranes, and it is well known that many persons may have pleurisy causing adhesions without experiencing much discomfort. If this is true, perhaps the importance of adhesions as a diagnostic point in the location of the abscess may sometimes be vitiated.

Dr. Theodore B. Appel, Lancaster. There is one point to which I wish to call attention, which Dr. Alleman's paper illustrates very nicely, and that is, in operating for the relief or removal of foreign bodies from the trachea or in operations on the trachea for other traumatic conditions, you will find a very distinct and very high elevation of temperature following the operation, not long in duration, and not associated with very marked depression or disastrous after effects. It seems to me that such elevation of temperature is peculiar to this class of cases, and I believe it has a very definite relation to the amount of trauma that has preceded and it does not have the same significance which such a temperature after ordinary operations would indicate. In Dr. Alleman's case the temperature rose in a few hours to 107 degrees, but dropped to practically normal by morning, and the child went along with a very satisfactory convalescence. I have seen comparatively few cases, but all had such a temperature range.

Dr. Ernest Laplace, Philadelphia: Relating to foreign bodies that have gotten into the respiratory tract, I wish to lay emphasis upon the fact that the foreign body, whatever it may be, that is lodged in the bronchi and that does not give any symptoms of asphyxiation, had better be left alone for a while, even if the body be as sharp as a pin. Last year a nurse in one of the hospitals in Philadelphia swallowed a pin with a white head, the pin being about two inches long. It stuck in the respiratory tract on the left side. While the pain was great and we located the exact position of the pin with the *x*-ray, I did not at any time use any operative interference, but simply counseled her to take good care of herself and keep quiet. At the end of three weeks, in a violent fit of coughing, the pin was expelled. I believe it is proper in these cases to forego operation as long as no symptoms of asphyxiation are threatened.

With regard to abscess of the lung, I believe that the treatment depends upon its location, and the pus will seek the direction of the least resistance. If the abscess is below the bifurcation of the bronchi, it may even drain upward and be expectorated. If the abscess points outward, it will form adhesions to the thoracic wall, making it easy to open. These adhesions must sometimes be brought about by the surgeon. He can go ahead and do successfully what otherwise might have produced fatal complications. That the pus will take an upward direction and spontaneously open into the bronchial tube, I can distinctly bear witness from having seen at the time I lived in New Orleans about thirty cases of abscess of the liver. The abscess opened into the diaphragm, and from the diaphragm into the lung, and the pus was gradually expelled. If pus from the liver can be expelled in this manner, surely pus from the lung can also be discharged in the same direction.

An acute abscess may speedily result in septic pneumonia. Only subacute and chronic abscesses allow an abscess wall to form which will gradually guide the pus to its exit.

Dr. George W. Guthrie, Wilkes-Barre: In operations for empyema I use chloroform in preference to ether although I am an ether advocate for general surgery. In operating where the respiratory surfaces are so limited, I find great difficulty in using enough ether to produce anesthesia, and I have encountered very disagreeable symptoms from ether without getting anesthesia, while with chloroform I have not had that trouble. I universally use chloroform, except in a very mild operation, such as puncture, where I can use local anesthesia, preferably eucain.

As to resection of the rib in children, I do not think it is often necessary. Some time ago, when Dr. Roberts took the position that we should seldom remove a portion of the ribs, I stated that I had not often found it necessary. Since then I have had to resect in a great many of my cases. In children, I do not think it is often necessary. I recall a patient, however, that I had in the hospital in March, 1905, with marked empyema of the chest and a scar, showing that an operation had been done before. In that case, I thought it wise to resect a portion of the bone, and I took from the pleural cavity one and a half inches of drainage tube, which had been used in the former operation. The patient recovered.

I recently had a case of abscess of the lung, which to me was very interesting; that of a man who had typhoid fever followed by pneumonia of the right lung with a long illness, and the trouble in the right side did not clear up. He had a see-saw temperature, and his physician had made several attempts at exploratory aspiration, without success. There was marked dullness at the right angle of the scapula, the temperature indicating infection, and I thought warranted going into the cavity. Making an incision as near the lower angle of the scapula as I could, without having the operation interfere with the scapula, and taking out one and a half inches of the rib, I found the two pleural cavities adherent. With a large aspirating needle, I had no trouble in locating the pus, and then with a pair of Halsted's forceps, I went through the covering and had pus galore. I tried irrigation (I remember my old classmate, Dr. Eisenberg, and irrigation) and I used normal salt solution. It brought on violent coughing, which the patient said produced salty taste in the mouth. I then stopped irrigation and depended on drainage, and the man made a good recovery.

Dr. P. Y. Eisenberg, Norristown: I had not expected to say a word on the subject under discussion after hearing the very excellent papers, which so thoroughly cover the ground. But my friend, Dr. Guthrie, having contended against rib resection in the discussion of my paper at York, upon "Empyema," I feel that I should express my satisfaction at this change of his views.

My experience in opening the thorax, with the exception of two cases, has been with old empyema in which I found simple incision was followed by early closure.

One of my cases was that of a little boy about seven years old who had had pneumonia in Italy that was followed by an empyema. His attending physician made an incision for drainage which speedily closed; on being taken to a hospital a surgeon inserted a drainage tube. The lad came to this country soon after and resided in our town for some time before coming under my observation. When first seen pus was exuding scantily through the thoracic wall and it became absolutely necessary to establish permanent drainage in some way, so I decided upon a subperiosteal rib resection,which Dr. Gibbon has said is the proper thing. After resection, free drainage, the temperature fell and all conditions of confined pus disappeared. Everything seemed favorable for about two months when closure began after removal of gauze drainage. I then removed another rib and thoroughly irrigated the pus cavity and drained again with thorough irrigation every second day. This also proved inadequate, when two additional ribs were removed (four in all) with the costal pleura with them, to permit chest wall to fall inward and become adherent to the pulmonary pleura, which it finally did. The case was very much like the one Dr. Gibbon has described.

In the second operation, I was enabled to get my finger down to the bottom of the pus cavity, when I found a drainage tube that had come over from Italy in the boy's thoracic cavity.

In twelve operations there has not been a single death as a result of the operation or from the disease itself; one patient died from another disease. Rib resection with free drainage has always given satisfactory results. I use chloroform just as Dr. Guthrie does, and have never had cause to regret it.

Dr. B. Franklin Royer, Philadelphia: I want to report briefly regarding a foreign body in the trachea of a patient recently admitted to my care in the Municipal Hospital. The patient, a child of eighteen months, gave a history of sudden respiratory embarrassment while eating peanuts. She was taken to the general hospital for treatment and observation; eighteen hours later we were asked to admit her with laryngeal diphtheria. Dr. Holmes called with the ambulance and found the child croupy and fighting for air. He accepted the diagnosis and intubated the child at once. After one deep breath it grew rapidly worse and the tube was removed. Later developments justify the statement that with inspiration the foreign body, which was originally lodged just below the vocal cords, now acted as a ball valve permitting ingress of air, but absolutely preventing the patient emptying her lungs. The patient was brought in and some hours later was again intubated without relief. During the night the croupy symptoms cleared up without improvement in breathing. Crying with a clear voice was noted when I saw her, and great difficulty in breathing was reported after admission. I excluded diphtheria and pneumonia as the causes and, learning the peanut story, I decided to do a low tracheotomy and search for the cause of obstruction. Under chloroform anesthesia the trachea was opened, and, as we inserted the cannula to give her a breathing spell, she coughed violently, delivering half a peanut kernel into my hands. Further exploration of larynx and trachea was negative. The cannula was kept in place except at short intervals for two weeks. She is now recovering from a bronchopneumonia and will be discharged in a few days.

A word in regard to the choice of anesthetics in operating for empyema. It happens with me at the hospital, as I believe it must happen with physicians in private general practice, that a neglected diphtheria patient, perhaps already partly paralyzed, or a scarlet fever case with a severe nephritis, develops an empyema and operation must be done. In the presence of such complications, I think all surgeons would advise against a general anesthetic. In such cases I do a thorough infiltration with cocain of Schleich's fluid preliminary to subperiosteal rib resection and mechanical removal of lymph clots with gauze about a finger. Drainage is established by inserting a rubber tube.

Dr. Lowell M. Gates, Scranton: I wish to report a few cases of foreign bodies in the air passages. One was a cloak pin, two and a half inches long, which lodged in the right bronchus at the bifurcation. Unfortunately it had the head downward. Tracheotomy was done, which, after the experience I had in this case, I would not perform again under similar circumstances. We could reach the pin with forceps, but on account of the fact that the point would immediately stick into the other side of the bronchus when we pulled it up, we had to leave it there. The child went home and several months afterward I heard that the child was still alive.

Another was the case of an ordinary dress hook. The child appeared at the hospital with a severe cough, evidencing that there was something in the larynx, and examination with the *x*-ray revealed the hook fastened just below the vocal cords. I did a high tracheotomy and when I reached the hook with the forceps, it would not pull down, so I pushed it up into the throat and as the mouth was not open ready to catch it, the hook went down into the stomach. I waited a day or two and recovered it from the stools.

It seems to me that Dr. Martin's tube is very much larger than would go in between the ribs. I would like to inquire if he ever tried a flattened oval tube.

With regard to resection of the ribs, the pus contains organized lymph so frequently and the danger of resection is so slight that it seems to me always advisable, if you use general anesthesia. I recently operated on a woman to whom, on account of her extreme age, I gave only local anesthesia. Several weeks afterward the discharge still kept up and I found by working and washing that we still had coagulated lymph in the cavity. If we had done more cleaning out of the cavity at first, perhaps that complication would not have arisen. In the case of a baby five months old I aspirated twice withdrawing milky pus and the child got well. Another child of eight years of age, I aspirated twice because the parents would not permit radical operation. Pus afterward oozed from the needle punctures for several weeks. But the child made a good recovery. I have had cases where slight necrosis of resected end of rib occurred, without effecting results. I have also lost a drainage tube in the pleural cavity and fished it out.

Dr. A. Enfield, Bedford: In confirmation of the administration of chloroform, I always use it in these cases because in my opinion there is much less danger. I give the patient a dram, or half a dram, or perhaps more without any air.

As to the drainage, I want it to be thorough. The first case I operated on was a hostler of mine from whom I took away a gallon of pus. I stuffed the wound with oakum and opened it the second time and took away the pus and filled it again. To-day we take more care with our dressings; we have them prepared for us; they are aseptic, but oakum was all that we had at that time to use. I do not believe it is necessary to make resection of the ribs, if you make your incision large enough and thorough enough and keep it open. I do not believe in drainage tubes. I never used one. The last case I operated on was a patient of my son, Dr. W. F. Enfield, of this place. We made a very large incision, washed out the cavity and the patient made a splendid recovery in a month, after being ill for over three months. I used chloroform in all the cases. I now use bichlorid gauze to fill the cavity.

Dr. Jopson, closing: In connection with Dr. Roberts' remarks on rib resection, I would emphasize the difficulty of locating encysted collections unless a rib is excised. Thus several of my cases were encysted and one case was an intralobar empyema, in which the treatment was practically that for lung abscess, the pus collection being reached through the lower lobe of the lung. I believe the *x*-ray to be of great value in localizing the site of the pus, in encysted and interlobar collections. I consider it difficult to practice siphon drainage in children, but it has been done and with good results in chronic cases.

As to the insertion of the drainage tubes, the text-books say that the length of the drainage tubes has a great deal to do with the persistence of a sinus, and we are advised to give careful attention to this. I am not sure that we pay enough attention to it. At the present time I make the drainage tube double, and I always remove one tube as soon as the discharge decreases. I have not found tuberculosis to be a common complication in children.

In regard to Dr. Alleman's paper, I perform tracheotomy promptly in cases of foreign bodies in the air passages. Intubation has been suggested by Bokai of Budapest, who recommended it, not as a curative agent but as a temporary measure until the trachea could be opened.

Dr. O'Day, closing: I hope that Dr. Roberts will pardon my taking exception to what he said regarding spasm. Spasm is simply a protective measure to prevent the introduction of a foreign body into the trachea. I must take exception to what he said regarding the spasm produced by the foreign substance or body when inversion brings it in contact with the inferior margin of the cords. I believe there is spasm all along the trachea, but that the constant, or rather the prolonged, contact loses its exciting effect, the same as the hand becomes unconscious of objects supporting it for a while. As to inversion, sixty per cent. of the cases collected and recorded have yielded to that method, and coming from a man no less eminent than Professor Murphy, should, I believe, merit some consideration. The Doctor must not misunderstand me. I meant no harm to the Philadelphia gentlemen who have succeeded in suturing wounds of the heart. I merely wanted to show the great unreliability of newspaper statements, because it is only the oblique wounds which offer the surgeon this chance of his life for notoriety,—wounds at right angles with the ventricle are immediately fatal. Dr. Kirschner, in charge of the Oil City sanatorium for tubercular patients, has referred two cases of pulmonary abscess to me which previously had been diagnosed consumption. In one case the abscess ruptured into a bronchus as soon as the pleura had been opened. The pus found free drainage through the mouth and the patient made an uneventful recovery. In operating upon these cases I use an H-shaped incision, including skin, muscle, ribs and pleura in the flaps. With iodoform gauze the upper and lower flap is pushed in against the visceral pleura. In a couple of days the lung can be explored with trocar or needle; then if the cavity is found, there is ample room through which to work. I prefer chloroform anesthesia. In one of my cases an abscess was so close to the surface of the lung that I opened it with an ordinary hemostatic forcep. Two years ago I listened to the paper of Dr. Eisenberg, at the York meeting. In the discussion, Dr. Roberts said he never had to resect a rib and was able to establish good drainage without. In my next case the method was tried but I failed, and later resected a portion of rib. But Dr. Roberts' patients get well; there must be something about his technic which I do not understand. I would like it if Dr. Roberts would explain it to us.

Dr. Martin, closing: In regard to foreign bodies, I have been struck by the absence of comment on the use of the bronchoscope. This truly admirable instrument has proven its value, not only from the diagnostic standpoint, but from that of the therapeutist, since it has enabled the operator to remove, through its lumen and without cutting operation, foreign bodies lodged in the right bronchus.

Dr. Rodman, closing: In reference to what Dr. Gibbon has called attention and which he states to be the most practical point in the technic of the operation, that is, whether or not there are adhesions present, it is not enough to diagnosticate the abscess. We should go further, and demonstrate, if possible, the presence of adhesions; that usually can be done but not always. The examination of the literature on the subject indicates that adhesions are present in about ninety per cent. of the cases, and when we take into consideration the fact that possibly many cases of empyema have been reported as abscess of the lung, the percentage is very large. I know I have been present at operation in at least two cases where the surgeon had been convinced that it was a case of abscess, when it was really only a case of empyema. I am inclined to think that ninety per cent. is an outside margin; that adhesions will not exist in more than fifty per cent. Certainly in two cases that I operated on, they did not exist at all. Of course, if they do not exist, we must either suture the visceral to the parietal pleura, or pack the pleural cavity at that place with iodoform gauze, so that adhesions will take place in twenty-four hours; then you open the abscess secondarily.

The next point raised by Dr. Gibbon is with reference to the location of the abscess. In the paper I said it was practicable by the local signs alone to locate an abscess. But when these local signs are supplemented by the clinical history, it is not difficult in the majority of cases.

The next point raised was as to the anesthetic. I have preferred chloroform, and gave it with perfect satisfaction in my two cases. I have taken the position that it is better to open the lung with the actual cautery, the use of which is sufficient contraindication to ether.

The next point raised was by my friend and colleague, Dr. Laplace, who states that he has known abscess of the liver to drain spontaneously. No one denies that cases of empyema drain spontaneously, yet no one here to-day, in the treatment of empyema, has advised the waiting process, in order that the empyema may discharge itself spontaneously by rupture into the bronchus. It does occur in rare instances, but one is hardly justified in waiting for it to occur when surgery offers so much better chance to recover. An abscess of the lung or liver is no more apt to cure itself spontaneously than an appendiceal abscess. Who would wait for the latter to rupture into the bowel? In cases of perforation of the intestines, due to typhoid fever, five to ten per cent. of the cases recover without operation; the same is true in case of gunshot wound of the intestines made by a small rifle bullet, yet I take it one would be thoroughly unjustified in giving the patient the slight chance which Nature affords, when you can very materially improve such chance by operation without great danger *per se*. Abscesses of the lung should not be operated on until Nature has been given a reasonable chance, as I said in the paper. After Nature has struggled with the abscess for two or three weeks, and the temperature does not come down, and the patient is growing progressively septic, as shown by the history of the case, then I think surgery and only surgery should be relied upon. It is the supremest folly to stand by awaiting something which may, but rarely ever does, happen.

NOTES IN REGARD TO THE HISTORY OF IMMUNITY IN TUBERCULOSIS.

BY BENJAMIN LEE, M. D.,
Harrisburg.

(Read before the Dauphin County Medical Society at Harrisburg, February 4, 1907.)

The past year has witnessed a noticeable reawakening in interest in the question of immunity in tuberculosis. The treatment of that disease seems to be narrowing itself down to the administration of nitrogen in the largest possible doses, first, in the form of fresh air and, secondly, in that of food, with sunlight as an important adjunct. Our literature on its therapeusis, voluminous as it is at the present day, consists principally in detailing the methods by which and the conditions under which this essential element of nutrition may be most readily and most copiously administered.

But just now this problem seems to be less earnestly discussed than formerly, that of the prevention of the disease occupying more attention. The immense advances made by serotherapy, within a comparatively recent period, have naturally stimulated this research. Tuberculosis being a disease of bacillary origin, what more natural to suppose than that the means which had proved remedial or preventive in so many others of similar origin, should prove so also in this!

In its double capacity of prophylactic and cure, diphtheria antitoxin has won its hard-earned fight in the face of great odds and reduced the mortality of that scourge of childhood by a large percentage.

The antipest serum has already proved so successful as to hold out hopes that the awful loss of life caused by the bubonic plague in the Orient may be to a considerable degree prevented.

The tetanus antitoxin has greatly reduced losses from lock-jaw in the domestic animals, and a careful selection of appropriate cases, such as we are accustomed to find following the maniacal and demoniacal celebration of the anniversary of our country's independence, combined with early interference, may save the lives of many budding patriots.

The *Annales de l'Institut Pasteur* of Paris for the month of May, 1906, contains a valuable contribution to the study of bacillary or epidemic dysentery by two French army surgeons,[1] which offers the following conclusions:—

"The serum of horses immunized against the dysenteric bacillus possesses antimicrobic and antitoxic properties . . . .

"This serum, innocuous to man, is a specific in the treatment of bacillary dysentery . . . .

"It antagonizes at the same time the infection and the toxic action, producing almost immediate relief of all the intestinal disturbances and assuring a speedy cure."

The various vaccines against several of the most destructive infective diseases of live stock have their well established place already in the armamentarium of the veterinarian. The antistreptococcus and the antipneumococcus serums are slowly finding their appropriate position in the therapeusis of both man and domestic animals.

Not only in our great centers of medical research in Europe and on this continent, but at the uttermost ends of the earth and in the isles of the seas, patient investigators are lending their best energies to give this latest concept of the universal medical mind, immunization against tuberculosis, its widest expression and its most beneficent realization.

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[1] Contribution à l'étude de la dysenterie bacillaire ou épidémique. Le Sérum Antidysentérique Par M. M. L. Vaillard, Medicin Inspecteur de France et Ch. Dopter, Medecin—Major de 2e classe, Professeur agrégé du Val-de-Grâce.

Among the recent contributions to the literature of this subject must be noted "The Second Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis." In this are included a "Report on Professor Maragliano's Method of Producing a Specific Serum for the Treatment of Tuberculosis, and of Vaccinating against Tuberculosis" by Dr. M. P. Ravenel of the University of Pennsylvania, assistant medical director and bacteriologist of the institute, also a report by the same author on the vaccinal and curative serum of Dr. Alexander Marmorek; "A Review of Recent Investigations and Observations upon the Immunization of Animals against Tuberculosis," by Prof. Leonard Pearson of the University of Pennsylvania, veterinary surgeon of the Phipps Institute, and "Clinical Reports on the Use of the Maragliano Serum" by Drs. Joseph Walsh, William N. Stanton and H. R. M. Landis, members of the medical staff of the Phipps Institute.

The first of these reports details the visits of Dr. Ravenel to Professor Maragliano's laboratory and clinic at Genoa, prefacing the same with a brief review of the work of other experimenters who have attempted to discover a specific for tuberculosis.

A full account of Maragliano's methods was published in the first Annual Report of the Phipps Institute, and indeed it was to verify the work of that observer for the American public that Dr. Ravenel was commissioned to make this investigation. As in the production of all serums against infectious diseases his method consists in a gradual immunization of the animal by successive inoculations of increasing virulence until the prophylactic antibodies are developed in the blood. The exactness of his method for producing this result and of measuring the potency of the serum constitute his especial claim as a discoverer. He considers that he has not produced simply a tuberculin, but a serum which contains the sum total of the toxins formed by the tubercle bacillus. Two preparations are injected, a bacillary pulp, containing living bacilli, and a bacillary filtrate, from living cultures, which has passed through a Pasteur-Cumberland filter. These are injected at the same time but on different parts of the body.

Dr. Ravenel's conclusions are that Maragliano has succeeded from a laboratory standpoint in producing a serum which protects experimental animals, but that the therapeutic value of his serum has not yet been fully established. This experimenter also produces a vaccine from dried tubercle bacilli subjected to a temperature of 150 degrees centigrade in glycerin for one and a half hours. It is too early to pass an opinion on the efficacy of this agent. His observations have extended over a period of fifteen years.

Marmorek's announcement was not made until 1903. He considers that the toxin which possesses prophylactic powers is only formed by very young bacilli, which he denominates "primitive" bacilli. His toxic serum is produced by injecting calves with the leukocytes of guinea-pigs. To this a glycerin bouillon made from liver is added and the tubercle bacilli are grown upon this medium. In order to develop the antitoxin, the toxin thus produced is injected into horses in the manner of other experimenters. Rabbits vaccinated with this serum are protected for a brief but indeterminate period from the effects of intravenous inoculations of tubercle bacilli. Dr. Ravenel had no opportunity of seeing patients treated with this product.

The five cases subjected to inoculations of Maragliano's serum by physicians of the institute, gave substantially negative results, as carefully compared with other patients who in all other respects were similarly cared for.

In Dr. Pearson's careful résumé of the subject he naturally views the question from the standpoint of the veterinarian, but, as experimentation in this field is necessarily confined almost exclusively to the inferior animals, this really embraces the whole question.

While "Ravenel in his review considers that the serum treatment of tuberculosis had its origin in the hemotherapy of Hericourt and Richet in 1889," Pearson tells us that "efforts to immunize animals against tuberculosis may be said to have commenced earnestly with the discovery of tuberculin by Koch in 1890."

The difference in point of time is not considerable. It is simply interesting and even important as indicating that, for some time previous to Koch's announcement, other, and indeed not a few, investigators had been working on the same problem. Pearson's own first experiments with tuberculin as a remedy for tuberculosis of cattle were made in 1892, and were reported in the Proceedings of the First International Veterinary Congress of America in October, 1893. The results from the use of tuberculin as an immunizing agent were, however, distinctly disappointing to himself as well as other investigators and led to efforts to discover some more efficacious agent. Koch himself soon came to the conclusion that we must produce immunity not only to toxins but also to bacteria.

After mentioning all the investigators of any note both in this country and abroad who had devoted themselves to the study of this problem, Pearson concludes, as Koch had already done, that "it is evident, however, that immunity, to be of much value, must confer protection against the living organism as well as against its poisons," and declares that the first decided successes began to be obtained when living tubercle bacilli were pressed into the ranks to fight living tubercle bacilli. He refers to Dixon[2] as having "in 1889 suggested that it might be possible to establish tolerance for the tubercle bacillus by treating animals with 'tubercular material' from which tubercle bacilli had been removed by filtration or *that animals might be inoculated with bacilli, the virulence of which had been diminished.*[3] He found that animals, inoculated from an old culture containing club-shaped and branching forms of tubercle bacilli, resisted subsequent inoculations with virulent tubercle bacilli." The efforts of Grancher and Ledoux-Lebard in 1891, of Hericourt and Richet, and of Trudeau[4] in 1892 and 1893, all of whom made use of avian bacilli, are then noted.

In 1894 De Schweinitz[5] injected cultures of human bacilli into cattle, subcutaneously, intravenously and intraperitoneally in large doses without injury.

McFadyean[6] employed emulsions of tuberculous material and cultures intravenously, the experiment continuing fifteen weeks in one case and from two to three years in three others. He furnished careful details of the treatment in each case, and claimed that the natural immunity in these cattle was much increased by injections, but doubts whether absolute immunity can be obtained by any method.

Von Behring's name is perhaps better known than that of any other experimenter in this line.[7] Up to 1901 bacilli from human sputum were principally employed by him, but every possible form of tuberculous material seems to have been tried. His experiments have been on an immense scale and many cattle immunized by him have been sent to other observers to be tested. The process of vaccination which he suggests and makes use of he calls "Jennerization."

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[2] Jocum. Comp. Path. and Therap. June, 1901, March, 1902.

[3] The italics are own own.

[4] *New York Medical Journal*, July 23, 1893.

[5] *Medical News*, Dec. 8, 1894.

[6] *Medical News*, Philadelphia, Oct., 1889. *Medical and Surgical Reporter*, Philadelphia, Sept. 6, 1896.

[7] Beiträge zur experimentellen Therapie, Heft 5, Marburg, 1902.

The protocols and temperature records furnished by Von Behring and also by other investigators to whom immunized cattle were sent from Marburg for testing are presented by Pearson with their remarks and conclusions.

A careful series of tests of Von Behring's vaccine made at the Royal Veterinary High School in Budapest by Director Huytra is also given in full. To give an idea of the extent to which this plan has been tried, Von Behring estimated that, in the latter part of the summer of 1904, 10,000 calves had been vaccinated with good results; that is to say, without injury to their health.

Up to the present time, however, there has been a remarkable lack of postmortem evidence of the value of any of the methods adopted.

The most exact reports in this regard are those of Pearson and Gilliland[8], who in November, 1900, inoculated a young bull with cultures of bacilli of the human type, intraperitoneally. Subsequent inoculations were also made, subcutaneous, intravenous, intraperitoneal and intrapulmonary. Fourteen months later he was inoculated intraperitoneally with a virulent culture of bovine bacilli. Eight months after this he, being still fat and apparently healthy, was killed. The only tubercular indications found were enlarged and caseous lymphatic glands about the rectum and a few hard small nodules in the lungs, containing tubercle bacilli. The three control animals died in a few weeks of acute miliary tuberculosis. Two other young cattle similarly treated and killed at the expiration of seven months, showed absolutely no evidence of tuberculosis.

These observers claim to have demonstrated that (1) after repeated intravenous injections of cultures of tubercle bacilli from human sputum, the resistance of young cattle to virulent tubercle bacilli of bovine origin may be increased to such an extent that they are not injured by inoculation with quantities of such cultures that are capable of causing death or extensive infection of cattle not similarly protected; and (2) intravenous injections of much larger quantities of culture of human sputum tubercle bacilli than are necessary to confer a high degree of resistance, or immunity, upon the vaccinated animals, may be administered without danger to that animal.

They claim, therefore, in relation to the question as to whom credit should be given for the discovery of antituberculous vaccination as applied to cattle, to have been the first to *demonstrate by postmortem examinations* that cattle could be "definitely and highly immunized against virulent bovine bacilli by *systematic preliminary treatment with human tubercle bacilli alone*, and in which the immunity of animals so treated was measured with that of untreated animals."

For this link in the long chain of evidence which has gradually been forged during a period of so many years by so many patient workers these observers certainly should be given due credit.

"To Von Behring" says Pearson "unquestionably belongs the credit for first proposing a definite method for the practical application of vaccination of cattle against tuberculosis. This method, however, had not been tested before it was proposed, and has since been modified by Von Behring in some particulars, and even now, after three years, there is still an amazing dearth of experimental proof of its efficacy."

Among the more important of Pearson's conclusions are the following:—

"Artificial immunity is relative, not absolute."

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[8] *Philadelphia Medical Journal*, Nov. 29, 1902.

"A lower degree of immunity will suffice under some conditions than under others."

"It must be remembered that the vaccine that has proved to be so effective in immunizing cattle consists of living tubercle bacilli of the human type. If these organisms retain their life and virulence for a long time in the body of the bovine animal, and especially in the edible parts of the carcass, or if they are excreted through the udder, it will be seen that the vaccination of cattle may have a very direct relation to the production of tuberculosis in man."

On this point De Schweinitz and Schroeder utter the following caution: "The practicability of such a method as applied to animals that are to be used as food, or for the purpose of producing milk, is questionable, as it is apparently impossible to say how long the human tubercle bacilli may live."

The experiments of D. J. Cantacuzene detailed in the *Annales de l'Institut Pasteur* for November 21, 1905, under the title "Investigations on the Experimental Illness Caused by the Inoculation of Degreased Tubercle Bacilli" are of much interest in this connection.

Considering that the waxy substance, which adheres to or envelops the bacilli, forms a very serious obstacle to the resorption of the bacillary bodies and therefore to the success of vaccination experiments on the tubercular poisons, he made it his object to devise a plan by which the bacilli that he was going to employ could be completely cleansed of all fatty and waxy material. The bacilli were those of bovine origin, which he claims are more toxic for guinea pigs (the subject of his experiments) than any others. His method was that of intraperitoneal injection, and his bacilli were of such potency that a dose of twenty centigrams would kill a guinea pig, weighing at least 550 grams, in thirty-six hours, while a dose of eight centigrams was sufficient to kill a guinea pig, weighing 300 grams, in five days. The symptoms and postmortem appearances were carefully noted.

One of the most characteristic lesions is eosinophile of the blood, especially in rapidly fatal cases. This coincides with the observations of Von Behring and of Claude and Lakey. The lesions may be summed up as follows: "An acute necrosis of the immigrated polynuclears in the peritoneal exudation, grave lesions of the renal epithelium and muscular fibers of the heart, pulmonary hemorrhages and an intense destruction of the red blood corpuscles in the sinuses of the spleen, together with the acute eosinophile of the blood already mentioned.

The use of nonfatal doses is immediately followed by acute symptoms, similar to those observed when fatal doses have been employed, but less severe, soon followed by emaciation, a transient eosinophile of the blood and tubercular new-formations, such as nodules and abscesses, which casefy, undergo fibrinous transformation and are ultimately entirely reabsorbed.

The pus of the casefied abscesses, small or large, is exactly similar to true tuberculous pus. Emaciation is rapid and extreme in proportion to the strength of the dose. Complete recovery takes place in from ten weeks to three months.

Animals thus inoculated react to tuberculin, the reaction ceasing in from three to seven weeks in accordance with the severity of the case. The disappearance of this reaction corresponds closely with the time when bacillary bodies can no longer be found on the omentum.

The next series of experiments was undertaken in order to determine whether by subjecting the degreased bacilli to the action of a chemical agent their toxicity might be modified.

The agent selected was Gram's iodo-ioduretted solution, in which they were emulsified, being left in contact for a quarter of an hour and constantly shaken. They were then decanted and mixed with normal salt solution for inoculation.

The febrile reaction was intense, the mononucleosis of the blood extremely energetic, and the leukocytosis about fourfold what occurred in the case of the noniodized bodies. The reaction to tuberculin ceases at the end of three weeks indicating the rapid destruction of the microbes by the phagocytes. Repeated injection with these iodized bacillary bodies, we are told, confers on the guinea pigs a certain degree of immunity against the toxic effects of a second injection of degreased bacilli. We are promised a future memoir on this interesting phase of the question.

The possibility of accelerating the resorption of the degreased bacilli by submitting the animal to daily injections of iodid of potassium was made the subject of experimentation by Dr. Romalo with the result that the resorption of the degreased bacilli and of the tuberculous neoformations can be greatly hastened by daily injections of iodid of potassium, which evidently highly stimulates the phagocytic properties of the mononuclear leukocytes.

The whole process of cellular reaction is most carefully observed in this series of experiments which well repay perusal.

In the *Popular Science Monthly* for September of the present year is found an address on the subject of "Immunity in Tuberculosis" delivered by Simon Flexner, M. D., of the Rockefeller Institute for Medical Research, of New York City, at the joint meeting of the Association of American Physicians and the National Association for the Study and Prevention of Tuberculosis, held at Washington, D. C., May 10, 1906.

In his quite full historical preface Dr. Flexner follows Koch in attributing the first step towards the solution of this problem to Klencke, who, in the year 1843, succeeded in inoculating rabbits with tuberculous material from man.

Villemin's experiments, which followed soon after and in which both human and bovine tubercular matter were employed, were decisive in proving the infectiousness of tuberculosis. Nearly twenty years slipped by, however, before Koch, in 1882, announced his great discovery. Of the four distinct types of tubercle bacilli, human, bovine, avian and those of cold-blooded animals, only the two first named are likely to prove of decided service in working out this question.

The early Italian experimenters, Rivolta and Mafucci, are, however, given credit for their careful study of the pathogenic possibilities of the avian variety; but the latter is so rarely seen in man that it may be disregarded as a source of danger. Just here, however, the question suggests itself whether this very fact does not point to it as a possible source of furnishing an immunizing agent.

Koch's statement in 1901 that tuberculous cattle do not furnish a serious menace to the health of human beings has been amply refuted in this country by Ravenel and Theobald Smith. "When all the known facts of food infection in tuberculosis are assembled" says Flexner, "they make quite an imposing array, for they indicate, quite in opposition to the exclusive views expressed by Koch, that tubercle bacilli entering the body with food may be implanted upon the mucous membrane of the mouth, from which, probably chiefly in the region of the tonsils, they may be carried to the lymphatic glands of the neck and adjacent parts where they develop and produce tubercular disease, or they become implanted upon the intestinal mucosa and pass the epithelial barrier without first causing disease there and set up lesions in the mesenteric lymph nodes or even be transported by the blood or lymph to the distant lungs."

Directly bearing on this question, the *Annales de l'Institut Pasteur* for May 25, 1906, contains an article on the "Intestinal Origin of Pulmonary Tuberculosis," and the "Mechanism of the Tuberculous Infection" by M. M. Calmette and Guerin.

These observers carried on a series of experiments on adult animals of the bovine species. The conclusions at which they arrive are briefly, first, that animals readily contract tuberculosis through the intestinal tract and that the passage of the bacilli through the intestinal walls leaves no traces, and second, that in young animals the bacilli are ordinarily retained in the mesenteric ganglia, while in adults they are more generally distributed, being carried together with the enveloping leukocytes into the lymphatic circulation and through the pulmonary artery to the lung and, third, that so-called *primitive* pulmonary tuberculosis is actually of *intestinal origin.*

To the same conclusion point the investigations of E. C. Schroeder, M.D.V., and John R. Mohler, V.M.D. of the U. S. Bureau of Animal Industry, published in Bulletin No. 88 of that Bureau, during the past summer, on the "Tuberculin Test of Hogs and Some Methods of Their Infection with Tuberculosis." Among the results obtained by these observers are the following:—

"Hogs readily contract tuberculosis through the ingestion of infected food.

"The feces of cattle that swallow tubercle bacilli are highly infectious for hogs exposed to them.

"The feces of tuberculous cattle very probably contain numerous tubercle bacilli that reach the intestine through swallowing or otherwise.

"The conclusion that tubercle bacilli may pass through the intestinal walls and the neighboring lymph glands is in perfect harmony with the results obtained from our experiments."

Next to the submaxillary lymph glands the lung is the most frequent seat of disease, having been affected twelve times out of a possible fifteen.

The experiments of Nicholas and Descos, of Ravenel and of Vallée are referred to as abundantly supporting this theory.

To return to Flexner's article, he mentions as a matter of history that "while the discovery of the microbic agent of tuberculosis naturally awakened the hope that a specific means of treating and, possibly, of preventing tuberculosis might now be found, the early years following the cultivation of the tubercle bacillus saw no realization of this hope, and to-day we are still far from the desired goal." "I can not do better at the beginning than to remind you that the successful point of departure has been the discovery that variations in type and in virulence exist among tubercle bacilli." "The first important contribution" he tells us "to the subject of experimental immunity in tuberculosis was made by Koch in connection with his researches on tuberculin." "But a high and lasting degree of immunity has never been secured by the use of tuberculin." This he naturally attributes to the fact that "tuberculin does not represent the entire series of forces contained in the bacilli which the body has to resist in preserving itself from infection with tubercular poison." Neither the "soluble gross-products of the parasites" nor "cultures of tubercle bacilli killed by heat, sunlight or other agency" are capable of producing immunity. "Inoculation of living cultures of the tubercle bacilli is the only method which has produced immunity deserving the name."

Although the experiments of Martin and Graucher, and Courmont and Dorr, published in 1890, are alluded to, yet Trudeau in 1902 and 1903, and De Schweinitz in 1904 are given credit for the "first really promising achievements of this end."

The work of Von Behring, McFadyean, Pearson and Gilliland and Neufeld, all of whom used living cultures of human tubercle bacilli, is rapidly rehearsed with substantially the same criticisms as those of Pearson of whose report he had the opportunity of examining the advance sheets.

After an allusion to the so-called "opsonic index" of E. A. Wright of London, Flexner concludes his article as follows: "As Koch's phenomenon shows the tuberculous organism to have developed defenses against subsequent tuberculous infection which the normal body does not possess in equal degree, the employment of tuberculin indicates that the diseased body can be aroused artificially to put forth a stronger effort than its unaided natural forces enable it to make in order that the disease may be overcome. Herein resides a great principle, an immense power for good, and consequently a great hope for future progress in the rational and specific treatment of tuberculosis in man."

At the recent meeting of the British Medical Association in Toronto, Canada, in August, 1906, a paper on the "Prevention of Tuberculosis" was read before the Section on State Medicine, by Dr. Samuel G. Dixon, Commissioner of Health of the State of Pennsylvania, who was present by invitation, this subject having been assigned him.[9]

My references to Dr. Dixon's connection with this investigation are taken partly from this paper and partly from other papers by him and from contemporaneous medical literature. As a bacteriologist and as professor of hygiene in the University of Pennsylvania, Dr. Dixon was naturally compelled to give this matter profound thought, and, like all students of bacteriology, entertained high hopes of the realization of the dream of a remedy for tuberculosis as a result of Koch's discovery of the bacillus of that disease in 1882. Nothing definite, however, appears to have occurred to him until in the summer of 1889 he was prosecuting investigations in the laboratories of King's College and the College of State Medicine, London, when he chanced to observe, in a specimen which he was staining, tubercle bacilli of a different form from that recognized up to that time. Some of these were curved, some club-shaped and some branched. He conceived the idea that these might be involution forms and therefore of reduced strength and virulence. If this were the case it might be possible to make use of such in establishing a tolerance for the tubercle bacillus, not only in the inferior animals but even in man.

Further experiments in his own laboratory confirmed the discovery and he found it possible, by subjecting cultures to adverse conditions, to obtain these unusual forms as desired.

He therefore considered himself justified in giving the facts to the public. The announcement appeared in the *Medical News* of Philadelphia for October 19, 1889. Accompanying it was a cut portraying the new forms of the bacilli.

Reprints of the article were generally distributed, and it was widely commented upon by the medical press. In the course of it occurred the following hypothesis: "First, it is possible that, by a thorough filtering out of bacilli from tubercular material, a filtrate might be obtained and attenuated so that, by systematic inoculations, a change might be produced in living animal tissues that would enable them to resist virulent tubercle bacilli. Second, to bring about a chemical or physical change in living tissues that would resist tubercular phthisis, it is possible that inoculations with the bacillus would have to be made; yet before this could be done the power of the virulent bacilli would have to be diminished, otherwise the result would be most disastrous."

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[9] *British Medical Journal*, September 15, 1906.

It can not fail to be noticed that the first of these hypotheses contained the suggestion of tuberculin, and the second, that of vaccination as at present practiced for the immunization of cattle.

Before the expiration of this year he was able to announce to the New Jersey Sanitary Association the success of this attenuated virus in rendering animals inoculated with it immune to the action of virulent virus for a period of months at least.

Professor Koch's announcement that he had succeeded in developing a substance which had the power of preventing the growth of the tubercle bacillus was made, it will be remembered, before the International Medical Congress in Berlin in August, 1890, and was greeted, as it deserved to be, with tumultuous applause, but it will also be remembered that the mode of preparation of this substance was not then disclosed. On different occasions in the course of the next two years Dixon publicly reaffirmed his success in the continued inoculations of guinea pigs, rabbits and opossums with the prepared virus. He, however, took the position, as reported in the *Philadelphia* (Medical) *Times and Register* for November 15, 1890, that he had not felt that the time had arrived for him to experiment on the human subject, and that he did not mean to be tempted to take any risks until the act would be purely an unselfish one. "Even with the results that have been obtained in my laboratory," he said, *"I would be sorry to have the general public stimulated with the idea that inoculation for tubercular phthisis has been perfected.* Owing to the rumored report that Professor Koch has been and is inoculating human beings, it behooves me to await his results and understand his methods. If, however, it should appear that he is working on different lines and that his plan is less dangerous than my own, it will be welcomed and adopted by me."

In the autumn of 1890, Dr. Dixon again visited Europe in order to assure himself of the accuracy of the reports of Professor Koch's success and, as he said in his remarks before The Academy of Natural Sciences of Philadelphia, of which he was president, "in the interest of humanity, as well as in the interest of the Academy and of the Jefferson Medical College and Hospital." His expressed wish on that occasion was that he "might return better understanding microörganic life and armed with that which will hereafter check the tubercle bacillus in its devastations in the animal economy."

The high hopes which he entertained before leaving were, however, as will have been anticipated, not realized.

Two days after the disclosure by Professor Koch on January 15, 1891, of the nature of his remedy, the *Medical News* of Philadelphia, realizing the intense interest aroused in the subject on the part of the medical profession in common with the general public, issued an extra edition containing two cable despatches, one of which reported a meeting of the Berlin Medical Society on January 7, at which Professor Virchow exhibited specimens from twenty-one patients treated by Koch's method who had died before January 1, and which illustrated the irritating effects of the fluid, and demonstrated the eruption of fresh crops of tubercles after the injections. Professor Virchow expressed himself as not prejudiced against the remedy, but as simply wishing to give warning against its too general application.

The second dispatch was abstracted from the article in the *Deutsche medizinische Wochenschrift* of January 15, communicated by Professor Koch, in which the announcement was given to the world, that "the remedy with which the new treatment of tuberculosis is carried out is a glycerin extract of pure cultivation of tubercle bacilli.'' ''The constitution of the active principle'' he says ''can as yet be only a matter of conjecture.'' Side by side with these articles was published a brief statement from Dr. Dixon, furnished by request of the editor, on the ''Possibility of Checking the Tubercular Process by the Agency of a Metabolic Product of the Tubercle Bacillus,'' in which was briefly described the method resorted to by him in order to produce an immunizing substance, and from which I quote somewhat in detail.

After referring to his original announcement he says:—

''As a less degree of virulence would be desirable in order to increase the power of animal resistance to pathogenic organisms I cultivated the bacilli in a number of tubes to the stage at which few or no ordinary rod-formed bacilli could be found in the cultures. When they arrived at this state of life I imbedded a mass of the bacilli and débris under the skin of a guinea pig. The inoculation apparently set up a disturbance in the animal economy. There was a short febrile stage; the lymphatic glands became swollen and the guinea pig seemed to be quite sick. This condition, however, soon passed away, and the animal recovered. Immediately after this injection, the animal seemed to resist the effects of virulent tubercle bacilli.

''In working out the two hypotheses published on October 19, 1889, I became convinced that by treating a mass of tuberculous tissue containing the odd forms of bacilli with some powerful solvent I might dissolve out a principle that, when injected into the animal economy, would change the chemical conditions of the tissues and thereby prevent the growth of the tubercle bacilli that inhabited the tissues.

''To accomplish this, I submitted the tubes containing these actually tuberculous bacillary growths to the action of ether and also to a saturated solution of chlorid of sodium. The respective mixtures were then passed through a Pasteur filter without pressure. This active principle, when subcutaneously injected in tuberculous animals, causes a febrile reaction. The tissue in the immediate neighborhood of the tubercles becomes hyperemic and the symptoms manifested resemble those produced by the introduction of the original mass. They also resemble the symptoms said to be produced in tuberculous animals by the introduction of the Koch remedy into the circulation.''

The last two of these articles were published under the headings respectively of ''The Composition of Koch's Fluid'' and ''The Composition of the Fluid of Dixon,'' and it was the evident intention of the editor to call attention to the close similarity of the two fluids.

One week before Professor Koch made his final announcement, Dr. Dixon delivered a lecture before the students of the Jefferson Medical College in Philadelphia, on his new method of treating tubercular affections of the skin. In the course of this lecture he exhibited to the class a vial of Koch's fluid which he had brought with him from Europe. Commenting upon it he said, ''The reagent is probably a metabolic product of the tubercle bacillus, the bacilli having been filtered out. At present I am inclined to believe that the reaction produced by it is diagnostic of tubercular tissue; yet until its curative power is determined we must be cautious in our use of it as a diagnostic agent for we have been taught that inflammation, which in all probability is tuberculous, is often set up in tissue that before treatment was apparently healthy. The remedy may render tissues more susceptible to the action of bacilli than before its action. Further it may even disseminate bacilli into tissue that otherwise never would have become tuberculous. Should the dissemination of tuberculosis be extensive, the great decrease in the healthy lung parenchyma may prove disastrous to the life of the patient. Consequently the remedy is positively contraindicated in widely disseminated lung tuberculosis unless in a much smaller dose than I have yet heard of its being employed. Professor Koch personally informed me that he felt quite certain of the power of his remedy to cure lupus and very mild cases of laryngeal tubercle, but that he did not believe it safe at present to make any estimate of its therapeutic value in other forms of tuberculosis."

The fact that this lecture would be delivered had been publicly announced, and, as it was known that Dr. Dixon had just returned from Berlin, not only was there a large number of students present, but many physicians also. The lack of enthusiasm which marked his treatment of the subject, so in contrast with the highly colored accounts which the daily press was giving, was a serious disappointment and subjected him to severe criticism.

The coincidence will perhaps have been noted that the warning which he felt it his duty to utter was given the day following that on which Virchow made his sensational demonstration to the Berlin Medical Society and that the specimens then exhibited illustrated to a marked degree the dangers which Dr. Dixon had pointed out from a purely theoretical standpoint. This lecture appeared in the same number of the *Medical News* with the cablegrams above noted. A few weeks later he reported in the *Times and Register* for February 28, 1891, a fatal result apparently traceable to the injection of this fluid and in this connection said, "I fear our remedy as generally prepared from the tubercle bacillus is much more valuable as a prophylactic than as a curative agent, and yet I have not by any means given up all hope of its having remedial power. . . . I can not but indulge myself with the expectation that the time may be approaching when we shall be able not merely to destroy tuberculous tissue, but the microorganism that we find so intimately associated with tuberculosis."

On March 24, following, he made a report to The Academy of Natural Sciences on the experiments at that time being pursued in the bacteriological laboratory of the Academy for obtaining the tubercular poison, the immunity tests being still in progress. The subcutaneous injection of dilute sulphuric and formic acids and of the bile salts and the injection of predigested fats together with antiseptics into the intestinal tract of animals suffering from tuberculosis were also dwelt upon.

In the annual address before the State Board of Health of Pennsylvania in May of the same year he spoke thus of the bacillus of tubercle, "What its cycle of life is outside of the animal economy we do not know, but we do know that in certain artificial culture mediums we can grow it to such an age that instead of its morphology being a straight rod, as usually described, it will be seen throwing out branches." "This condition, however, is not at all permanent, as a fresh culture medium will, from masses of these branch forms, grow simple rod-shaped bacilli, yet, after continuing the transplantation of the microörganism in this more complex stage onto a fresh medium twenty-five times or more, its power to produce tuberculosis in the animal economy is much reduced: in fact I have young dogs, guinea pigs and rabbits resisting large inoculations of these growths, while the control animals inoculated with the second removal of bovine bacilli have developed general tuberculosis, or a form of disease which means death to the animal affected and at the same time presents all those features which are thoroughly characteristic of human tuberculosis in its histology," etc. The address closes with the following general statement. "Inoculation with tuberculous matter for the prevention or cure of tuberculosis can not at this stage be recommended for general practice as too few test cases of cure have as yet been brought to an entirely satisfactory conclusion, while immunity in some of the lower animals has been sufficiently demonstrated in my own laboratory since my first publication in the *Medical News* of 1889 to confirm me in my belief that it can be and is produced in a greater or less degree. . . . By the agency of the tubercle bacillus I believe we will have a means to prevent tuberculosis and to diagnose and cure those who have fallen victims to the malady, yet, at present, I am exactly of the same opinion as I was two years ago when I cured my first tuberculous animal, which animal happily still lives to speak for itself."

While, however, Dr. Dixon continued persistently and consistently to pursue his bacteriological quest for a prophylactic and a remedy, he by no means neglected the broader aspects of the question. In his Toronto address, he alluded to the fact that his experiments with the metabolic products of tuberculosis had led him also to consider the action of certain other products of metabolism on the animal economy and their relation to those of tuberculosis. He especially called attention to the antagonism of nitrogenous products to the tubercle bacillus, as set forth in a paper on "The Possible Relationship between the Tuberculosis Diathesis and Nitrogenous Metabolism," read before the Academy of Natural Sciences of Philadelphia in November, 1894, and suggested the possibility of establishing a lithemic habit in the system with the object of antagonizing or substituting a tubercular diathesis.

In delivering the Address on Hygiene bebefore the Medical Society of the State of Pennsylvania, he took for his subject "Air," maintaining that "in studying the etiology of disease, we must not permit ourselves to be persuaded that bacteriology has given us *le mot d'énigme.* Microörganisms undoubtedly have the power when introduced into the circulation of healthy animals of producing certain diseases. Yet I feel convinced that in tuberculosis and many other germ diseases they, in a large majority of cases, only change an already unhealthy condition into one definitely and fatally morbid. Normal tissues supplied with pure air have great power to resist germs taken into the body through either the digestive or the respiratory tracts. This conclusion is reached from the fact that I have found guinea pigs and rabbits yielded much more readily to inoculations of tubercle bacilli when even confined in cages kept in the cellar under a city laboratory than they did when kept in my animal house in the country, so arranged as to have a large volume of pure air circulating through it both day and night."

In looking back over this brief sketch a comparison naturally suggests itself, as it has to others before, between the dates on which the announcements of Koch and Dixon were made respectively. The *Times and Register* of January 24, 1891, remarked editorially, "Dixon made cultures of the tubercle bacillus, sterilized these cultures and administered them to guinea pigs and other animals and proved that these animals thereby acquired a certain degree of immunity against tuberculosis. The theory that the tubercle bacillus produces an agent that is toxic to that bacillus originated with Dixon and his experiments proved that there was truth in that theory, but Dixon did not employ his lymph as a means of curing tuberculosis already existent; he did not consider his lymph an agent that could be usefully and safely employed on man, and that is his opinion to-day. This is not a matter for debate; it is history and these things were published one year before Koch gave utterance to his first word on the subject."

The *American Naturalist* for February, 1891, in an editorial article says:—

"The time seems opportune to glance back at the events of the last eighteen months which have proved rich in scientific research in relation to the tubercle bacillus, and to place on record, not only for our own satisfaction, or for those more immediately concerned, but especially for the benefit of succeeding generations, the announcements that have been made public from time to time in regard to that microbe and the means that have been discovered for combating its ravages upon the animal economy.

"In the month of March, 1882, Dr. Koch announced to the medical world that he had discovered the existence of a microbe hitherto unknown and to which he had given the name of tubercle bacillus.

"From the date of this announcement by Professor Koch, up till October, 1889, nothing particularly new was heard on the subject, and as far as the literature on the tubercle bacillus goes we have every reason to believe that the search for a toxic agent to combat the disease of tuberculosis and the ravages of the tubercle bacillus has been fruitless. Indeed to all outside appearances the tubercle bacillus, having been once discovered, was to be left unmolested to pursue its ravages on helpless humanity, but in reality it was being followed up by tireless and relentless foes.

"On October 19, 1889, was published in the *Medical News* of Philadelphia, by Dr. Samuel G. Dixon, at that time professor of hygiene to the University of Pennsylvania, a monograph announcing his discovery of the hitherto unknown forms of the tubercle bacillus . . . There are two facts that can not fail to strike the observer. The first is that a period of over seven years had elapsed from the date of his (Koch's) first publication on the tubercle bacillus and that announcing his discovery of the toxic agent; and the second, that his researches after the substance, must have commenced about the period of Dr. Dixon's publication of October, 1889 . . . It does not seem unfair to infer that Professor Koch had been unsuccessful during the preceding years in arriving at any satisfactory results. His own words, 'My researches on this substance, therefore, although they have occupied me for nearly a year,' etc., seem conclusive on this point."

After a further historical review of the situation, the writer quotes the exact language of Dr. Koch in the announcement of January 15, 1891, in which the nature of the remedy was disclosed and then says, "We have italicized these words in order to call the reader's attention in connection with their identical nature with the following statement by Dr. Dixon published months before; 'That by subjecting a mass of growing bacilli to different degrees of heat, etc., and injecting the mass into animals he not only prevented tuberculosis but also cured the same.' "

Compare this with Koch's just published claim that by injecting tubercle bacilli that had been submitted to solar light, heat, etc., he had produced in guinea pigs immunity, and also cure, and moreover that by this the curative process against tuberculosis was established, and if there is any difference between the two, we have not been able to detect it.

Dr. Seneca Egbert, professor of hygiene in the Medico-Chirurgical College of Philadelphia, in an article published in the *Medical News* of Philadelphia, March 23, 1895, under the title of "Hygiene and Tuberculosis" says: "The fact that such investigators as Dixon, Koch, Vaughan and others have been able to secure a condition of immunity in many susceptible animals is proof that we shall ultimately be successful with the great mass of human beings . . . The first thing to be noted is the close relationship between the agents employed by all those who have obtained notable results, and of these agents to the nitrogenous products of normal animal metabolism. As Dixon was the first to secure anything like immunity to tuberculosis in animals (I myself having seen him do this almost if not wholly a year before Koch's announcement of his work on tuberculosis), so was he the first, I believe, to show that there might be produced from cultures of the tubercle a substance strongly resembling certain well-known nitrogenous products of metabolism, and that these latter would give, when injected into both healthy and tuberculous subjects, closely similar results to those obtained by the injection of his protective material and the practically identical tuberculin."

The Bureau of Animal Industry of the U. S. Department of Agriculture has just issued a paper by D. E. Salmon, late chief of the Bureau, entitled "Tuberculosis of the Food-Producing Animals," which deals in part with the immunization of cattle against tuberculosis in which he states that the ablest veterinarians in the world are confidently expecting that a practical and safe plan of procedure for this purpose will soon be developed. In his historical sketch he gives the credit to Daremberg of having "as long ago as 1889 made experiments with a view to the production of immunity from tuberculosis by inoculating pigs and rabbits with sterilized cultures of the tubercle bacillus." This was exactly the year, as will be remembered, in which Dr. Dixon announced his discovery.

In concluding his address at Toronto, Dr. Dixon made a new suggestion as to the discovery of a solvent for the immunizing principle in the following terms:—

"I have, therefore, been working to obtain that substance which we know produces immunity to this disease in cattle, and yet, while nothing has been obtained which will warrant results being given to the world, I am tempted, because of this occasion, to suggest the line of thought upon which my new work is being executed, hoping to tempt my coworkers to help me follow out investigations to either a positive or negative conclusion.

"The results of postmortems and the vaccination of cattle with tubercle bacilli have taught us that there is in the tuberculous animal economy not only something curative, but also preventive. Tuberculin is not an antitoxin. It is a diagnostic agent, and stimulates an incapsulation of tubercle foci, and also causes a special degree of febrile reaction in tuberculous animals. Therefore, I am injecting cows in the tissue of the neck with twenty cubic centimeters of concentrated tuberculin with the idea of producing a reaction, and, while the temperature is rapidly rising, drawing the blood and separating the serum which is tested for its active principle by being introduced into both healthy and tuberculous animals, the reaction being carefully noted, the normal serum, of course, is also being injected into check animals.

"Upon second thought I appreciated the fact that we have immunity more marked in some parts of the body than in others, which suggests the possibility of the latter containing an antitoxin, yet so far we have failed, as I have said, to get an antitoxin of sufficient potency to be curative. This failure is likely due to the fact that in the first place, if it is produced by the tubercle bacillus, we have not used the right solvent. It has occurred to me, therefore, that it might be possible to obtain the antitoxin by the use of fluids from the animal (but more certainly if we take the serum from those parts of the body which are more naturally immune, like the pancreas). If this protective substance, on the contrary, is produced by the animal cells, would it not be best in making our antituberculous serum to take the blood, not from the general economy, but from parts of the animal which show the greatest tendency to immunity: therefore, from the pancreatic vein?

"Again, I am trying a line of experiments by intercepting the blood in the portal system, and using solvents to extract any antitoxin that it may contain before it is acted upon by the liver.

"This is an intimation of the line of work now being conducted in the very newly created laboratories of the commonwealth of Pennsylvania, too new, however, and the time allotted me by this association too short to venture to give any further details upon this occasion, but the results of the work will be published by the state government from time to time. Should these results be successful, I shall be content in view of the great good which will accrue to humanity, regardless of credit to myself."

The date of the delivery of Dr. Dixon's address at Toronto was August 21, 1906. It is a somewhat interesting coincidence, evidencing the continued attention which this subject is receiving, that the *London Lancet*, in its issue of August 25, contains a thoughtful paper to which attention is called editorially, entitled "Some Observations on the Effect of Sterile Caseous Matter in the Treatment of Tuberculous Disease" by Peter Paterson, M. B., surgeon to the Royal Infirmary, Glasgow. Impressed with the fact that, while the walls of tuberculous abscesses contain many tubercle bacilli, the contents are almost entirely free from them, this observer inferred the presence of some substance in the contents which is inimical to the bacilli, and also concluded that, as the fluids are being constantly renewed, this material is to be looked for in the incapsulated solid. By alternately freezing and thawing tuberculous pus for five or six months, he succeeded in apparently sterilizing it. The serum was then decanted from the sediment and the latter, after washing for three days in a continuous stream of cold sterilized water to remove all soluble toxins, was mixed with sterile normal salt solution in such proportion that each cubic centimeter of the suspension contained five milligrams of solid substance. "Large numbers of animals" he tells us "have been injected with this suspension and in no instance has tuberculosis been produced." In three cases of bone tuberculosis it has resulted in complete healing of sinuses in a few weeks; in one case of lupus of twelve years' duration it was successful in two months, and in one case of pulmonary tuberculosis with cavities in both apices it produced very marked improvement with disappearance of the bacilli in three months. These cases, while too few to base conclusions upon, certainly justify further investigation, as he claims.

The same number of the *Lancet* contained an allusion to a meeting of the Academy of Sciences of Paris on August 6, 1906, at which a paper was read by a M. Baudran in which he described his efforts to isolate from tubercle bacilli a toxic alkaloid in crystalline form, to which he had given the name of tuberculinine, from which had obtained a substance that he believed to possess remedial powers. Encouraging experiments had been made on both guinea pigs and bovine animals. Subcutaneous injections of this antitoxin on his own person, continued for several weeks, gave rise to no elevation of temperature or other inconvenience. No report is made of attempts to treat human beings with this agent.

In conclusion, I trust that it will be felt that I have made good my assertion at the opening of this paper that the question involved is still one of vital interest to the medical profession as well as to bacteriologists.

FROM THE SECOND INTERIM REPORT OF THE ROYAL COMMISSION ON HUMAN AND ANIMAL TUBERCULOSIS, JANUARY, 1907.

The report is signed by Sir Michael Foster, Prof. G. Sims Woodhead, Prof. Sidney Martin, Sir John McFadyean and Dr. Robert Boyce.

CONCLUSION.

We may briefly sum up the bearings of

the results at which we have already arrived as follows:—

There can be no doubt but that in a certain number of cases the tuberculosis occurring in the human subject, especially in children,is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis; and there also can be no doubt that in the majority, at least, of these cases the bacillus is introduced through cows' milk. Cows' milk containing bovine tubercle bacilli is clearly a cause of tuberculosis and of fatal tuberculosis in man.

Of the sixty cases of human tuberculosis investigated by us, fourteen of the viruses belonged to Group 1; that is to say, contained the bovine bacillus. If, instead of taking all these sixty cases, we confine ourselves to cases of tuberculosis in which the bacilli were apparently introduced into the body by way of the alimentary canal, the proportion of Group 1 becomes very much larger. Of the total sixty cases investigated by us, twenty-eight possessed clinical histories indicating that in them the bacillus was introduced through the alimentary canal. Of these, thirteen belong to Group 1. Of the nine cases in which cervical glands were studied by us, three, and of the nineteen cases in which the lesions of abdominal tuberculosis were studied by us, ten belong to Group 1. These facts indicate that a very large proportion of tuberculosis contracted by ingestion is due to tubercle bacilli of bovine source.

A very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cows' milk containing tubercle bacilli. The presence of tubercle bacilli in cows' milk can be detected, though with some difficulty, if the proper means be adopted, and such milk ought never to be used as food. There is far less difficulty in recognizing clinically that a cow is distinctly suffering from tuberculosis, in which case she may be yielding tuberculous milk. The milk coming from such a cow ought not to form part of human food, and indeed ought not to be used as food at all.

Our results clearly point to the necessity of measures, more stringent than those at present enforced, being taken to prevent the sale or the consumption of such milk.

GOVERNOR STUART'S VETO MESSAGE.

Commonwealth of Pennsylvania,
Executive Chamber,
Harrisburg, May 1, 1907.

To the Honorable, the House of Representatives of the Commonwealth of Pennsylvania:

Gentlemen: I herewith return, without my approval, House Bill No. 211, entitled "An act to amend sections one, five, six, eight, ten, eleven, twelve, thirteen, fourteen, and sixteen, and to supplement an act, entitled 'An act to establish a Medical Council and Three State Boards of Medical Examiners, to define the powers and duties of said medical council and said state board of medical examiners, to provide for the examination and licensing of practitioners of medicine and surgery, to further regulate the practice of medicine and surgery, and to make an appropriation for the medical council,' approved May eighteen, one thousand eight hundred and ninety-three, by providing for an additional member on the State Medical Council and an additional state board of examiners to be known as the State Board of Osteopathic Examiners, for the licensing of osteopaths, changing the method of examination, providing for a preliminary education, requiring the applicant for license to take a course of four years in a medical or osteopathic college, prescribing the penalty for violations, fixing the appropriation to the medical council and providing for the revocation and suspension of license upon certain conditions."

This bill is an amended supplement to the act of eighteenth of May, one thousand eight hundred and ninety-three, (pamphlet laws, 94), the preamble of which is as follows:

Whereas, The safety of the public is endangered by incompetent physicians and surgeons, and due regard for public health and the preservation of human life demands that none but competent and properly qualified physicians and surgeons shall be allowed to practice their profession—"

It is now proposed by this bill to provide for an additional member of the State Medical Council and an additional State Board of Examiners, to be known as the State Board of Osteopathic Examiners. The general scope of the bill is to add to the act designed to protect the public from the dangers incident to the practice of medicine and surgery in incompetent practitioners, by licensing such as are, after rigid examination, found to be competent, somewhat similiar provisions for licensing practitioners of the science of osteopathy.

That the skillful practice of osteopathy has benefited the afflicted and alleviated human suffering in many instances is an established fact; that osteopathy may be practiced by its professors without the violation upon their part of the said act, one thousand eight hundred and ninety-three, regulating the practice of medicine and surgery, has also been established by judicial decisions. No legislation, therefore, is necessary to permit osteopaths to practice their profession. There is a broad and clearly defined distinction between practicing medicine and surgery and practicing osteopathy. It was stated by the representative of the osteopaths at the hearing accorded the opponents and sponsors of this bill, that osteopaths do not claim to be medicine or drug physicians. Carrying out this distinction, the bill provides for two kinds of licenses, and specifies that,

"Those licensed as practitioners of osteopathy, under the terms of this act, shall not be permitted to hold themselves out as licensees of medicine under the terms of this act."

The state is not concerned with any controversy between the different schools or sects of those who practice the art of healing, as to the merits and demerits of their respective schools; but it is interested in protecting the public from incompetent practitioners of every school or sect. Whether classifying osteopaths, who are not physicians or surgeons in the ordinary acceptation of these words, with physicians and surgeons, in legislation originally designed to be applicable only to physicians and surgeons, would afford the desired protection to the public, is extremely doubtful.

For the protection of the public the law requires a high degree of education and professional qualifications on the part of physicians and surgeons, but this bill provides that, "Nothing contained in this act shall be construed to affect the right to practice osteopathy on the part of any one who has been actively engaged in the practice of the same for five continuous and consecutive years prior to the approval of this act," and that any such person shall be entitled to registration upon making affidavit to such continuous practice. Again, only those registered physicians, who have practiced medicine and surgery in this state, for a period of ten years, are eligible for appointment to the present boards of examiners, while, under the provisions of this bill, graduate osteopaths who have practiced but four years, would be eligible for appointment to the proposed Board of Osteopathic Examiners. The regulation of the practice of osteopathy is desirable for the protection of the public, but in my judgment it should be provided for in some other manner than by attempting to embody such regulation in legislation having for its primary purpose the regulation of the practice of medicine and surgery.

For these reasons the bill is not approved.

EDWIN S. STUART.

THE NEW HYGIENE.

Dr. Denslow Lewis, in his chairman's address on the subject of Hygiene (*Journal A. M. A.*, June 16), calls attention to certain general principles and defines the new hygiene as an exponent of the necessities of modern civilization in all details that relate to the health and happiness of the human race. It must be practical, and above all things else it must teach the truth. It should study the past to meet the necessities of the present and the possibilities of the future, and it is the practitioners of medicine who must direct its efforts and control the future of the race. The United States has assumed new responsibilities of late years and the hygienic work in the Philippines is mentioned, together with the increasing dangers incurred in our enlarged trade relations with the Orient. In preventive medicine we have the problems of tuberculosis, and of the suppression of venereal disease and the alcohol question. To the solution of these problems of our present civilization the new hygiene consecrates itself.

"That the practice of medicine is not a sinecure is very evident to those who have been practicing for more than ten years."

The Pennsylvania Medical Journal.
PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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Bucks—A. F. Myers, M. D., Blooming Glen.
Butler—Robert S. Lowry, M. D., Butler.
Cambria—Harry J. Cartin, M. D., Johnstown.
Carbon—J. B. Tweedle, M. D., Weatherly.
Center—J. Y. Dale, M. D., Lemont.
Chester—H. Y. Pennell, M. D., East Downingtown
Clarion—R. A. Walker, M. D., West Monterey.
Clearfield—Charles E. McGirk, M. D., Philipsburg
Clinton—R. B. Watson, M. D., Lock Haven.
Columbia—Luther B. Kline, M. D., Catawissa.
Crawford—C. C. Laffer, M. D., Meadville.
Cumberland—H. H. Langsdorf, M. D., Carlisle.
Dauphin—Charles M. Rickert, M. D., Harrisburg
Delaware—Ellen E. Brown, M. D., Chester.
Elk—J. C. McAllister, M. D., Ridgway.
Erie—George W. Schlindwein, M. D., Erie.
Fayette—Owen R. Altman, M. D., Uniontown.
Franklin—John J. Coffman, M. D., Scotland.
Fulton—George M. Robinson, M. D., McConnellsburg.
Greene—James C. Knox, M. D., Waynesburg.
Huntingdon—H. C. Frontz, M. D., Huntingdon.
Indiana—H. B. Buterbaugh, M. D., Indiana.
Jefferson—Harry B. King, M. D., Reynoldsville.
Lackawanna—William E. Keller, M. D., Scranton.
Lancaster—P. P. Breneman, M. D., Lancaster.
Lawrence—B. E. Sankey, M. D., New Castle.
Lebanon—Ezra Grumbine, M. D., Mt. Zion.
Lehigh—H. Herbert Herbst, M. D., Allentown.
Luzerne—James W. Geist, M. D., Wilkes-Barre.
Lycoming—William E. Delaney, M. D., Slate Run.
McKean—James Johnston, M. D., Bradford.
Mercer—Charles I. Walker, M. D., Sharon.
Mifflin—Walter H. Parcels, M. D., Lewistown.
Monroe—N. C. Miller, M. D., Stroudsburg.
Montgomery—Edgar S. Buyers, M. D., Norristown
Montour—Cameron Shultz, M. D., Danville.
Northampton—Samuel S. Apple, M. D., Easton.
Northumberland—H. W. Gass, M. D., Sunbury.
Perry—L. M. Shumaker, M. D., Elliottsburg.
Philadelphia—R. Max Goepp, M. D., Philadelphia.
Potter—E. H. Ashcraft, M. D., Coudersport.
Schuylkill—George O.O. Sautee, M. D., Cressona.
Snyder—A. J. Hermann, M. D., Middleburg.
Somerset—H. C. McKinley, M. D., Meyersdale.
Susquehanna—C. C. Halsey, M. D., Montrose.
Tioga—A. H. Glover, M. D., Knoxville.
Union—Oliver W. H. Glover, M. D., Laurelton.
Venango—E. W. Moore, M. D., Franklin.
Warren—Mary C. Conant, M. D., Warren.
Washington—J. B. Donaldson, M. D., Canonsburg.
Wayne—Louis B. Nielsen, M. D., Honesdale.
Westmoreland—Myers W. Horner, M. D., Mt. Pleasant
Wyoming—George M. Kinner, M. D., Mehoopany.
York—G. E. Holtzapple, M. D., York.

All communications should be addressed to the Pennsylvania Medical Journal, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

Athens, May, 1907.

It is equally derogatory to professional character for physicians to dispense or promote the use of secret remedies.—A. M. A. Principles of Ethics.

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF THE EOSINOPHILE LEUKOCYTES IN THE CIRCULATION OF THE BLOOD.

An increase in the proportion of eosinophile leukocytes in the blood has been observed in connection with certain diseases of the skin, a number of acute infectious diseases and, more particularly, some forms of animal parasitism. On the other hand, both the total number of leukocytes and the proportion of eosinophile cells have been found diminished in cases of typhoid fever, and this phenomenon has been attributed to the inhibitory influence of the typhoid toxin on the activity of the bone marrow. The results of an interesting study of this aspect of the subject are reported by Dr. Leonard Blumgart (*Medical Record*, April 6, 1907, p. 561). Differential leukocyte counts were made in more than forty cases of typhoid fever. It was found that cases in which 0.2 per cent. and more of eosinophile cells were present pursued a mild course, while in those of moderate and major severity not a single eosinophile cell could be found. In cases of moderate severity the eosinophiles began to reappear at the beginning of the fourth week, at first only in small numbers and later in larger numbers. Under these conditions convalescence sets in and relapse becomes highly improbable. If eosinophilia fails to take place or, having taken place, the eosinophiles again disappear, it may be concluded that the morbid process has resumed its activity, and relapse is almost certain. As an outcome of the observations under consideration, the importance is pointed out not only of counting the number of leukocytes, but also of making a careful differential count and repeating this frequently throughout the course of an attack of typhoid fever until in fact the patient is dismissed. E.

QUACK MEDICAL ADVERTISEMENTS IN THE RELIGIOUS PRESS.

The observing will notice that religious papers are being cleansed from quack medicine advertisements. Much of this work has been done by the persistent efforts of the committee of the Ohio State Medical Society under the efficient leadership of Dr. Benjamin Blair of Lebanon. This committee has worked systematically upon the papers in its state, by having the doctors write to the editors and influence the men who attend the meetings of the religious bodies so as to have a good man or two, on the floor of every such church meeting, to push this work. The Presbyteries of Miami and Lima have both unanimously passed strong resolutions against this nefarious practice, demanding that their religious papers publish "the truth, the whole truth, and nothing but the truth." They advise their people to discontinue their subscriptions to such papers as continue to insert misleading advertisements. Just as soon as the people are awakened in this matter this great aid by the religious press to medical humbugs will cease.

A noticeable change is observed in the columns of the church papers published in Ohio, and too much credit can not be given to this committee. A great work will have been accomplished when this work shall have influenced the secular press. In Pennsylvania we are sadly remiss in this direction. Our city papers, both Sunday and daily, with their suggestive and deluding advertisements and paid reading matter that is supposed by the unsuspecting reader to be the sentiment of the editor, are "a stench in the nostrils" of a decent reading public. "Wonder workers for elderly men," "the lady's favorite prescription," and "whirling sprays" advertisements make elevating reading for our boys and girls!

Our society, while making long strides toward a more perfect medical organization, could with propriety sit on the footstool and learn from many of our sister states which lie to the west of our boundaries. Is it not probable that we rely too much upon our boasted medical center and magnificent array of medical colleges to the neglect of essential points that are equally important?

This improvement in the religious and secular press, doing so much for the education and protection of the public, should put to shame many of our so-called medical journals. As long as the "learned professors" of our colleges persist in lending their respected names to journals published in the interest of semi-proprietary medicines, what can we expect from the rank and file of the profession? Cleanse the medical press, and then go after the other fellows. J. B. D.

THE HISTORY OF MEDICINE.

The value of the history of medicine is, by a large body of the profession, unappreciated. Too often even the college bred physician who is familiar with the campaigns of Grant or Napoleon and who has studied the life of Columbus or Parkman's delightful histories and who has read Hume and Macauley and Gibbon is sadly ignorant of the history of his own profession and the great figures which contributed to make it. Too often to him Hippocrates and Celsus and Galen; Avicenna and Paré; Boerhaave, Sydenham, Harvey, Morgagni, Fallopius, and Vesalius are no more than mere names; while Bichat, Hunter, Cullen, and Laennec are perhaps but little better known.

The neglect of the study of American medicine has been, until recent years, well-nigh universal. Two charming books, those of Packard and Mumford, dealing with American medicine have recently appeared and should be widely read. The profession owes a debt of gratitude to these two authors. It can now no longer be said that the history of American medicine is inaccessible. In this connection the published papers of the Johns Hopkins Historical Club are deserving of most favorable mention. Almost without exception these papers published in the Johns Hopkins Bulletin have been instructive and entertaining. They should be assembled in book form.

Still another sign of the times, as indicating a growing interest in medical history is the publication of a quarterly journal in Brooklyn devoted to the history of medicine and to medical libraries. Among the few earlier works on the history of medicine by American authors should be mentioned those of Roswell Parke and N. S. Davis. All these publications are to be commended. For a fuller and more satisfying account of the general history of medicine, Baas' work, translated from the German, will be found adequate.

To read medical history is to make the physician broader and more sympathetic. He can comprehend better the problems of to-day by a knowledge of those of yesterday. The way of success and the pitfalls of error are more clearly apprehended by a study of medical history. Besides there is in it a relaxation and charm which the ordinary medical reading does not possess, or which at times, at least, wanes. He is a better doctor who has read the life of Marion Sims or of Gross or Larry or Ambrose Paré or Haller or Bichat.

So, from all points of view, this growing interest in the study of medicine is to be welcomed. It is to be hoped that the time will soon be ripe for the preparation by some one of the scholars of our profession of a more complete history of American medicine than has yet appeared. The material for such a work is rapidly accumulating. D.

CLINICAL PSYCHOLOGY.

A new publication, *The Psychological Clinic*, which has just made its appearance, once more brings to the front the question of the possibility of practical help to the practicing physicians by the psychologist. Few physicians can doubt that some help may be had from this source. It is to be hoped that the new journal will steadily aim to present psychology in such a practical form that it will be most available to the physician who is only too glad to welcome additional help from any source. Dr. Lightner Witmer of the University of Pennsylvania is the editor of the new journal; and he has secured an able corps of contributors, psychologists, pedagogues and physicians. D.

Editorial Notes.

The American Academy of Medicine.

The thirty-second annual meeting of the American Academy of Medicine will be held at Hotel Dennis, Atlantic City, on Saturday, June 1, and Monday, June 3, 1907. The president, Dr. Casey A. Wood, Chicago, will deliver the annual address, his subject being, "Medical Career and the Intellectual Life." Some of the other topics to be discussed are "The Teaching of Hygiene in the Public Schools," "The Comparative Value of the First Degree in our American Colleges," "The Superiority of the Playground to the School-room," "The Relation of the Medical Profession to the Housing of the People," and "The Relation of the Profession to Medical Legislation."

Every reputable college-bred physician is eligible for membership in the Academy, and it invites all who are interested in the medical aspect of the social problems of the times to unite in its study of these problems. Blank applications may be obtained from the secretary, Dr. Charles McIntire, Easton, Pa. S.

The American Medical Association at Atlantic City.

The fifty-eighth annual session of the American Medical Association will begin at Atlantic City on Tuesday, June 4. The railroad rate for round trip will be one first class limited fare plus one dollar. Tickets will be sold and good going May 31 to June 4 inclusive, and returning leave Atlantic City June 4 to 10. By deposit of the ticket by the original purchaser, in person, with the special agent at Atlantic City not later than June 10, and payment of fee of one dollar at time of deposit, an extension of the return limit may be obtained to leave Atlantic City not later than June 18.

Railroad tickets which read via Philadelphia, Washington or Baltimore, allow stopover at these places provided the ticket is deposited with the ticket agent at such place immediately on arrival. S.

Examinations by the Medical Board.

The place for holding the Pennsylvania State Board examinations has been changed from Harrisburg to Philadelphia and Pittsburg. In Philadelphia the examinations will be held in Music Fund Hall, 808 Locust Street; and in Pittsburg they will be held in the Pittsburg Academy, Ross and Diamond Streets, opposite the Court House. The time for holding these examinations will be June 25, 26, 27, and 28, 1907, beginning June 25 at 9 A. M. All candidates for examination will be required to furnish a cabinet photograph endorsed on the back by the candidate; and the photograph and signature certified to by the dean of the medical college from which the candidate graduated. Apply for all blanks to Dr. N. C. Schaeffer, Secretary of the Medical Council, Harrisburg, Penn., and for any information with reference to the work of the board, address

W. D. Hamaker,
Secretary of Board of Medical Examiners,
Meadville.

Another Pathy.

Glen Rose, Texas, has a chartered college that teaches "Quadopathy," the "combined methods of bloodless surgery, vitopathy, osteopathy and electrotherapeutics." *Colorado Medicine* remarks that "when the lack of prefixes necessitates the resort to the numerals, there is no 'end' in sight of the possible 'pathies.'" S.

Recently Elected Officers of the Bedford County Society.

President, Walter P. Trimbath.

First Vice-President, John A. Clark.

Second Vice-President, Uriah F. Rohm.

Secretary, Walter de la M. Hill.

Treasurer, Edmund L. Smith.

Reporter, Walter F. Enfield.

Censors, A. H. Evans, J. G. Hanks, W. E. Nycum, W. C. Miller.

Member of House of Delegates, S. H. Gump.

Alternates, Walter de la M. Hill, E. L. Smith. W. M. H.

Society Transactions Wanted.

The Medical Society of the State of Pennsylvania has no copy of its transactions for the years 1848, '49, '50, '54, '55, '65, '66, '67, '68, and '69. It has but one copy for any single year previous to 1880. For 1883 it has six copies; for 1884, three copies; for 1885, five copies; for 1886, two copies. Copies for any year since 1886 are not desired. Copies for 1880, '81, and '82 are not especially desired. Copies for any other dates will be thankfully received, and necessary transportation charges paid. S.

Osteopathic Bill Vetoed.

Governor Stuart on May 1 transmitted to the House of Representatives his veto of the Wickersham Four Boards Medical Bill. This message will be found in another column. S.

Another Osteopathic Bill.

There was introduced into the Senate, May 6, and reported out of committee the same day a new bill (Senate Bill No. 663) to regulate the practice of osteopathy. The bill passed the Senate and was reported to the House on May 9, where it was promptly reported out of committee and passed first reading, May 10. It provides for a separate and independent board of osteopathic examiners and for "a degree of doctor of or diplomate in osteopathy." Persons now engaged in the practice of osteopathy in this state are to be licensed without examination upon the payment of ten dollars. Persons who have been in continuous practice of osteopathy for ten years in any other state are to be licensed without examination. Others desiring to become osteopathic physicians must take a four year's course in a reputable osteopathic college and pass an examination in "anatomy, physiology, chemistry, toxicology, pathology, diagnosis, hygiene, obstetrics and gynecology, minor surgery, principles and practice of osteopathy, and such other subjects as the board may require."

Section 11 reads, "The license provided for in this act shall authorize the holder thereof to practice osteopathy as taught and practiced in the legally incorporated reputable colleges of osteopathy as provided for in this act."

Section 12 reads, "Osteopathic physicians shall observe and be subject to all state and municipal regulations relating to the control of contagious diseases, the reporting and certifying of births and deaths and all matters pertaining to public health the same as physicians of other schools, and such reports shall be accepted by the officers or department to whom the same are made."

It is presumed that in drafting this bill an attempt was made to act upon the suggestion in the veto of Governor Stuart that they should have a separate board and not be classed with physicians. It will be remembered, however, that the Wickersham Bill distinctly stated that practitioners of osteopathy should not be permitted to hold themselves out as practitioners of medicine, while the new bill gives them equal standing with physicians, "the same as physicians of other schools," but allows the osteopathic board to license its own examinees whereas the three other examining boards can only recommend their examinees to the Medical Council for licensure.

Efforts will be made in the House to defeat this bill on second reading and on final passage, but it is more than probable that it will have passed the House and gone to the Governor some days before this reaches the reader. Should the bill go to the Governor, members are requested to write him giving their reasons why the bill should not become a law. S.

Conference of Ohio County Secretaries.

There was held in Columbus, April 25, a convention of the county medical society secretaries of Ohio, at which seventy-seven of the eighty-eight counties were represented.

There was a full day's program consisting of the following papers: "The Relation of the Secretary to the Society and the Profession"; "The Relation of the Secretary to the Council"; "The Relation between the Local and the District Societies"; "How the Secretary's Work May Be Made Easier"; "My Plans for the Struggle"; "What Can a Secretary Do to Secure New Members"; "The Secretary and His Opportunity"; "How Can We Make 'Open Meetings' Most Successful?";

"The Social Factor in the Life of the Successful Physician"; "Our New Doctors, What of Them?"; "How Does Postgraduate Study Help the Medical Society in the Country?"; "How Does Postgraduate Study Help the Medical Society in the City?"

The expenses of the delegates were paid by the several county societies. The interest manifested by the secretaries was a revelation to the writer who had been requested to read a paper, and he returned home confirmed in his belief that a county medical society is, as a rule, just what the secretary sees fit to make it.

Ohio is wide awake as to her needs and the secretaries there are fully up to the standard. It is hoped to have with us at our conference of county secretaries at Reading, September 24, some Ohio men who will add to the interest of the conference. J. B. D.

Changes in Membership of County Societies.

The following new names have been reported from April 1 to May 4: Benjamin Phillips, Leeper; Philip W. Shumaker, New Bethlehem; Stoddard P. Gray, Chester; Jeremiah S. Irwin, Erie; William H. Boggs, Huntingdon; John M. Keichline, Petersburg; Edward W. London, Alexandria; Russel C. Gourley, Jacob A. Walters, Punxsutawney; David C. Mock, Medix Run; James F. Raine, Sykesville; James R. Smith, Soldier; Charles W. Davis, New Castle; Henry D. Jordan, Allentown; Frank M. Brundage; Conyngham; Gilbert M. NewBurger, Wilkes-Barre; Robert Mervine, Hillsgrove; Caroline J. Gilliland, Sharon; Howard Cyrus Harper, Jamestown; John H. Martin, Greenville; John P. Sprowl, Grove City; Edward Bigelow, Belleville; J. E. Auchmuty, Lewistown; Herbert Alonzo Spencer, Parkerford; Thorne Cornelius, Penfield; Burton A. Black, Polk; Earle W. Bolton, M. Ada McKee, Oil City; William H. Minnich, Dallastown.

William B. Irish (Western Pennsylvania Med. Coll., '94) died at his home in Pittsburg, March 22, from pneumonia, aged 36.

Alfred J. Yost (Univ. of Pennsylvania, '93) died at his home in Allentown, April 16.

Henry Horning has resigned from the Delaware County Society.

Henry W. Hitzrot has resigned from the Allegheny County Society.

Herbert F. Gross has removed from York County and is no longer a member of that society.

Martha S. Everett, 714 Madison Ave., York, has been transferred from the Lackawanna County Society to the York County Society.

Alice R. Evans has removed to 264 North Heights Ave., Youngstown, Ohio.

Hugh S. Maxwell has removed to Clairton.

Frank Bleakney has removed to Worthville.

G. Frank Dandois has removed to Ralston.

Ralph Steans has removed to Lewisburg.

Frank I. Patterson has removed to Washington.

Present membership 4745. S.

State News Items.

MARRIED.

Dr. Thomas O'Brien and Miss May Kurtz, both of Philadelphia, April 23.

Dr. Thomas J. Gilmore of Williamsport and Miss Lyle Sloan of Orangeville, April 18.

Dr. Arthur W. Carmichael and Miss Elizabeth Belle Davis, both of Coatesville, April 21.

Dr. Charles A. Stillwagen of Pittsburg and Miss Isabella Marie Kelly of McKeesport, April 18.

Dr. H. Albert McMurray of Youngwood and Miss O. Marian Wingfield, at Cumberland, Md., April 10.

DIED.

Dr. Samuel Clarke (Jefferson Med. Coll., '99) at Philadelphia, March 29.

Dr. Robert P. McCready (Jefferson Med. Coll., '05) at Tamaqua, April 28, aged 30.

Dr. Morris E. Michel (Medico-Chirurgical Coll., '93) at Pittsburg, March 20, aged 62.

Dr. William M. Kern (Univ. of Pennsylvania, '47) at Philadelphia, April 17, aged 87.

Dr. Guy C. Holcomb (Jefferson Med. Coll., '87) at Ulster, April 25, from tuberculosis, aged 42.

Dr. Robert W. Martin (Homeopathic Med. Coll. of Pennsylvania, '65) at Philadelphia, April 11, aged 65.

Dr. Lawrence F. Berry (Jefferson Med. Coll., '05) at Philadelphia, March 29, from erysipelas, aged 25.

Dr. D. David Fisher (Univ. of Vermont, College of Medicine, '83) at Kersey, March 24, from heart disease, aged 50.

Dr. H. E. McMillan (Western Pennsylvania Med. Coll., '91) at New Castle, April 6, from chronic kidney disease, aged 44.

Dr. Emory W. Blackburn (Eclectic Med. Institute, Cincinnati, '85) at Latrobe, April 4, from septicemia, due to a carbuncle.

Dr. Pemberton Dudley (Homeopathic Med. Coll. of Pennsylvania, '61) at Philadelphia, March 25, as the result of injuries received in a street car accident last December, aged 69.

ITEMS.

Dr. T. D. White, Orrstown, has returned from a visit to Texas.

Dr. R. E. Redmond of New Castle and his family have removed to Seattle, Wash.

Dr. David Maclay, postmaster of Chambersburg, is at Hot Springs, Va., for a needed rest.

Dr. J. William White, Philadelphia, has been elected advisory surgeon of the Pennsylvania Railroad Company.

Dr. W. M. L. Coplin has been elected by the board of trustees of Jefferson Medical College director of Jefferson Hospital.

Dr. P. Brough Montgomery, Chambersburg, now in Florida, has recovered his normal health and will soon return home.

Dr. Joseph Neff, Philadelphia, has been appointed director of public health and charities to succeed Dr. W. M. Late Coplin.

Dr. Franklin F. Arndt, Scranton, has resigned as city bacteriologist and Dr. Jonathan M. Wainwright has been appointed his successor.

Dr. John H. Gibbon, Philadelphia, has been elected professor of surgery and of clinical surgery in Jefferson Medical College, in succession to Dr. John H. Brinton, deceased.

Dr. R. W. Ramsey, Chambersburg, who has been confined to his room for eight weeks with pneumonia, has so far recovered that he will leave home for a rest and change of climate.

Diphtheria at Intercourse. Diphtheria has become so prevalent at Intercourse, near Lancaster, that the school board has closed the public schools and will not have them reopened this spring.

Dr. David P. Miller, Huntingdon, was tendered a reception and banquet, April 18, by ten of his fellow Huntingdon physicians, on his return with renewed health and vigor from a month's vacation in Bermuda.

Dr. C. D. Schaffer was recently elected mayor of Allentown to fill the vacancy caused by the death of Dr. Alfred J. Yost. Dr. Schaffer was acting mayor during the eighteen months' absence of Mayor Yost in the West.

Dr. Samuel G. Dixon, commissioner of health, has been elected an honorary member of the Academy of Physics and Chemistry of Pelermo, Italy, and that society has awarded him the "medal of the first class for scientific and humanitarian merit."

Loving Cup for Doctor. At the Annual meeting of the Delaware County Medical Society, April 11, the president, Dr. Jonathan L. Forwood, who recently observed his fiftieth anniversary as a practicing physician, was presented with a silver gold-lined loving cup by the Delaware County Society.

Reviews.

MODERN MATERIA MEDICA. The source, chemical properties, therapeutic action, dosage, antidotes and incompatibles of all additions to the newer materia medica that are likely to be called for on prescriptions. Revised to January 1, 1906. Price $1.50. New York: The Druggist's Circular. 100 William St. 1906.

This is practically an alphabetical list of the newer proprietary chemicals. To those who use these remedies the book will doubtless prove serviceable. K.

A MANUAL OF NORMAL HISTOLOGY AND ORGANOGRAPHY. By Charles Hill, Ph.D., M. D., Assistant Professor of Histology and Embryology, Northwestern University Medical School, Chicago. W. B. Saunders Co., Philadelphia. Flexible Leather, $2.00 net.

This is an elementary work, as intended by the author. The fundamental facts have been briefly but carefully stated in such manner as to make study pleasant. The chapter on development impresses us as better illustrated and more intelligently stated than is usual in elementary works. Naturally, as the author is endeavoring to treat a large subject in a small space, the subject matter at times seems heavy, lacking vitality. On the whole, however, students will find all that they need, of any of the subjects treated, arranged in such manner as to be easy of access and comprehension.

The book contains many good illustrations both original and copied from standard authorities. We find a number of excellent plates from Böhn and Davidoff.

If any of the chapters deserve special commendation, they are those on the teeth, the skin, the spinal cord, the brain, the eye and the ear. The chapter on laboratory directions covers the ground in a satisfactory manner.

We could wish that the general practitioners would take more time for the study of these branches of medicine, and, to any contemplating the study of histology and organography, we would commend these few hundred pages. C. R. P.

TEXT-BOOK UPON THE PATHOGENIC BACTERIA. For Students and Physicians. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College. W. B. Saunders Co., Philadelphia. Cloth, $3.50 net.

The fact that this work has undergone four revisions alone attests its great worth. If other proofs were needed of its value, Professor McFarland's high position and his professional attainments furnish them. This fifth edition comes in a practical form and meets the full requirements of the student and practicing physician.

It is probable that the importance of bacteriologic study is not properly appreciated by the general practitioner. It is certainly, as Dr. McFarland states in his introduction, the dictator of the medicine of the present and will be of the future, especially so far as the infectious diseases are concerned. He divides diseases caused by bacteria into three great classes. (1) The phlogistic diseases, subdivided into acute, subacute and chronic. In this division he places wound infection, gonorrhea, cerebrospinal meningitis, pneumonia, tuberculosis, leprosy, chancroid, glanders, syphilis, actinomycosis. (2) The toxemias,—tetanus, hydrophobia, diphtheria, cholera. (3) The bacteriemias,—anthrax, typhoid fever, yellow fever, chicken cholera, hog cholera, relapsing fever, influenza, acute contagious conjunctivitis.

The work deals only, as its name implies, with the disease producing bacteria. The author takes the view that only those bacteria which can be proven by the lesions or toxins they produce, to be disease producing, need be considered in such a work, and we are inclined to believe that he has "made good." For such a work words of praise seem to us to be words of supererogation. It is not an encyclopedia on this subjects but it is very complete indeed. C. R. P.

A MANUAL OF OBSTETRICS. By A. F. A. King, M. D., Professor of Obstetrics and Diseases of Women in the Medical Department of the George Washington University, Washington, D. C., and in the Medical Department of the University of Vermont, etc. Tenth edition, enlarged and thoroughly revised. 12mo., 688 pages, with 30 illustrations and three colored plates. Cloth, $2.75, net. Lea Brothers & Co., Philadelphia, 1907.

A book that has reached the distinction of "tenth edition, enlarged and thoroughly revised" has attained a position among books commanding respect. King's Manual of Obstetrics is worthy of the consideration its tenth edition demands. Its frequent rewriting is evidenced by the skill with which the rudiments of obstetrics are presented concisely yet clearly, as well as by the modern teaching maintained. Written specially for the student, its scope and arrangement are such that it becomes valuable to the practitioner as a basis for review. The summary of the Jurisprudence of Midwifery makes a closing chapter that the graduate will appreciate. C.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. For Students and Practitioners. By Hobart Amory Hare, M. D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; Laureate of the Royal Academy of Medicine in Belgium and of the Medical Society of London. Author of A Text-Book of Practical Therapeutics; A Text-Book of Practical Diagnosis, etc. In one very handsome octavo volume of 1120 pages, with 131 engravings and 11 full page plates in colors and monochrome. Second edition, revised and enlarged. Cloth, $5.00, net; leather, $6.00, net; half morocco, $6.50, net. Lea Brothers & Co., Philadelphia, 1907.

The treatise is concise but complete. Its style is such that the reading is easy. The author succeeds in accomplishing his purpose that present methods of treatment may be set forth so as to be practicable. Uncertain and debatable subjects are omitted as their discussion would have enlarged the work beyond the bounds of a single volume. The chapters on tropical diseases are of especial interest and value as a summary of the work being done in this field of medicine. The book has no age limit, it will prove valuable to the student as a text-book and to the practitioner as a ready reference book. This edition will undoubtedly prove as popular as its predecessors. C.

PHYSICAL DIAGNOSIS. WITH CASE EXAMPLES OF THE INDUCTIVE METHOD. By Howard S. Anders, A. M., M. D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia; Physician to the Philadelphia General Hospital, Tuberculosis Department; etc. With 88 illustrations in the text and 32 plates. 8vo, pp. xix., 456. New York: D. Appleton and Company, 1907.

Physical diagnosis is so important a branch of clinical medicine that the student and practitioner will do well to cultivate it most assiduously. It is an art based on the application of scientific principles and methods to the recognition of deviations from the normal in internal organs. To yield the greatest measure of usefulness, the information gained by this means must be correlated with that obtained in other ways. While some possess naturally greater acuteness of observation and higher powers of ratiocination than others, a notable degree of ability can be acquired by any one who chooses to master the principles and train himself in their application. The one thing must be learned from books or lectures; the other can be done only on the living subject. The book of Dr. Anders fulfills the first indication, being an admirable and comprehensive exposition of the subject with which it deals, written in a clear and interesting manner, well printed and excellently illustrated. Following a brief introduction, the work proper is divided into four parts, the first of which deals with the chest and is subdivided into four sections, which consider (1) methods and technic; physical signs and diagnosis in general, in seven chapters; (2) special physical diagnosis of some of the diseases of the respiratory tract, inductively considered; (3) the heart and pericardium, in six chapters; (4) special physical diagnosis. Part II. treats of the abdomen and its principal organs and is subdivided into two sections, which deal with (5) general examination of the abdomen and (6) the principal special organs of the abdomen. Part III. is devoted to the Röntgen ray in medical diagnosis and Part IV. comprises twenty-one beautiful Röntgenograms, both the work of Dr. G. E. Pfahler. There is a full index. The book can be most cordially commended. E.

Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of April 3, 1907, the president, Dr. James Tyson, in the Chair.

Preventive Medicine and Education. Dr. William S. Wadsworth insisted that preventive medicine should not be limited to the treating of diseases already developed but should strike at pathogenic tendencies which lead to disease. The subject of education was subdivided as an art into groups,—the home, the public system, private and special instruction, higher education and the various means for educating the public. He showed that the basis for all pedagogic work was a knowledge of physiology, psychology and ethics, and that, no matter what system or special sort of education might be desired, no other rational basis could be found. He insisted that no wise educator would ignore pathology and pathogenesis. It was deplored that the medical profession as a whole had not yet risen to the plane of doctors of men in their entirety; to be this a larger understanding of psychology is necessary. The hope was expressed that wise educators would seek medical men as advisers in their work. Great stress was laid upon the value of public education and the division of this work into the groups of (1) the board of health; (2) the board of education; (3) the community. The last group included the estimation of the results of systems of education in fitting the persons educated for the duties of life in the community; holding a check on educational pedants with antiquated conceptions regarding the value of technical training and general development and preparation for useful living.

A strong plea was made for some rational recognition of the great difference in capacity of pupils, and for such physical examinations as would preclude the physical and mental wreckage met with in the products of schools. He urged the necessity of more education upon how to live, and of a limitation of the method of memory training now in use. Reference was made to the freak work often found in institutions of higher education where untamed pedants have their freedom in devising methods of ruining mind, body and soul.

Dr. Martin G. Brumbaugh, in opening the discussion, referred to the course of study in the schools being the subject of criticism and accounted responsible for all the ills of childhood. Saying that he was not present in the defense of the course of study, he pointed out another element which conditions the health of the child during school years; namely, the way he lives when out of school. A knowledge of this fact would probably explain the impaired health found in school children. Much of this impairment he attributed to the kind of food given to the children, and to social dissipation. Correction of these faults is in line with preventive medicine. The tendency to divert a part of the intellectual energy of the child from the real work of the school to all sorts of training, music, dancing and horse-back riding, should be discouraged by doctors of medicine and advisers of mothers. He doubts whether the present course of discipline, through which a man passes to become a doctor of medicine, fits him in any adequate way to advise a home about the education of its children, and thinks there should be a modification in the technical aspects of training, including in the medical course a series of discussions giving a broader insight into the intellectual needs, limitations and possibilities of the children that will enable a man, when he becomes a physician, to give advice which will harmonize with the better thought of the educators of the community.

A strong factor in the preservation of the health of the child is vigorous exercise in the open air. In this connection he referred to the department of physical education recently opened in the public schools of Philadelphia. The business of this department it was said would be to coöperate with the medical experts visiting the school in caring for the child's physical welfare in the same scientific and continuous way as is his intellectual unfolding. One result of this new department would be the establishment of out of door playgrounds for children. He believes that the boy who plays under proper supervision is a cleaner boy morally because he is a stronger boy physically, morally and intellectually. The medical profession was urged to emphasize the importance of free outdoor life for the child, and the profession alone could give to those responsible for the results of the schools the definite scientific knowledge needed to gauge the operation of the course of study upon the children of the city. From this scientific knowledge the people can be set right so that the public school shall not bear more than its rightful share of criticism for its effect upon the lives of the city's children.

THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, February 7, 1907, at 8:30 P. M., the president, Dr. Wilmer Krusen, in the Chair.

Report of a Case of Chorea During Pregnancy. Dr. Collin Foulkrod reported the case of a patient in whom chorea occurred in the course of five successive pregnancies, possibly causing the death of three or four of the fetuses. By careful watching he succeeded in carrying the woman to term and delivering her of a living child. He was in attendance only during the last pregnancy. The patient was twenty-five years of age and had had chorea previous to her twelfth year of age. During her first pregnancy chorea developed and progressed to a rather severe and dangerous condition. Coincidently with this she developed a toxemia which progressed to eclampsia and at 7½ to 8 months a therapeutic abortion was done to save her life. During the second pregnancy chorea again developed, arsenic was used and she aborted at 4½ months. During the third pregnancy the treatment was the same, with abortion at three months. During the fourth pregnancy there was abortion at three months. During the fifth, as above stated she was carried to term, bromids in conjunction with chloral being administered. This case illustrated throughout the entire history the possible toxemic origin of chorea during pregnancy.

Dr. William R. Nicholson: Dr. Foulkrod has well brought out the present day theory regarding chorea, that it is a manifestation, probably, of a toxemia. His views in regard to the use of chloral to increase the excretory products of the woman may be of value. Cases of chorea are said to occur more frequently among women illegitimately pregnant, but I do not believe that a large statistical study would uphold that view. In the maternity hospital with which I have been associated I have yet to see a single case of chorea of pregnancy and I suppose that 75 per cent. of the cases delivered are illegitimate.

Some of the German authorities believe that labor should be induced for this condition if it assumed serious proportions, but recently the opinion has prevailed that these patients can go through their pregnancy under careful treatment and be safely delivered. The prognosis is better, the later the outbreak occurs in the pregnancy. I feel that the later the attacks occur the less severe they would be, just as a woman is less likely to suffer grave toxemia in the last pregnancy than in the first.

Dr. Foulkrod closes: I believe that in the fifth pregnancy of the woman I reported, the symptoms were much milder than during the first, but she aborted with strong choreic symptoms, so severe that she could not hold a glass of water in her hands.

The Diagnosis of Early Pregnancy. Ellice McDonald, M. D., in presenting this paper said that, with the hope of being able to put the diagnosis of pregnancy upon a more exact basis, a study of the conditions and pelvic signs was undertaken. There were in all 100 cases examined at various weeks of pregnancy. It may be said that the duration of pregnancy was calculated from the date of the last menstruation as this is the only date which can be exactly fixed. The pelvic signs were the only ones which were closely studied. The various signs of early pregnancy were said to depend upon the enlargement and growth of the physiological tumor. This enlargement is usually the first sign of pregnancy, and although it is simulated by many other conditions, it usually gives an indication for more careful examination. Jacquemin's sign of the violet hue of the vagina was of most value later in pregnancy than the eighth week. It was first noted at a spot just below the urethra. Before the eighth week Jacquemin's sign is of little value and uncertain. Blush of the cervix was noted in much the same percentage of cases as Jacquemin's sign.

During the study it was noted that in the early stages of pregnancy there was a marked difference in the ease with which the body of the uterus could be moved upon the cervix and the cervix upon the fundus. This is usually best noted about the fifth week and is usually so marked that the body and the cervix may be doubled upon themselves and brought together, the empty bladder and vaginal walls alone separating. This sign is best obtained by placing the palmar tips of the vaginal fingers posteriorly and below the end of the cervix and the fingers of the abdominal hand on the top of the fundus. The bladder must be empty and there must be no contraction of the uterus. The sign is very easily obtained after a little practice. It may be obtained before any thinning of the lower segment, but is caused by the same conditions which produce Hegar's sign.

Dr. Barton Cooke Hirst: There is no condition in which the gynecologist is more likely to make a gross error of diagnosis than in the diagnosis of early pregnancy. The only way to avoid mistakes is to examine patients in a methodical, careful, routine manner. I know of no mistake in any branch of medicine so awkward as a mistake in the diagnosis of pregnancy.

The sign to which our attention has been called is one that I have always grouped in my own mind with Hegar's sign, not making any distinction between the softening of the lower segment and the thinning. When I feel compelled to resort to this symptom in making a diagnosis I shall be interested in drawing the distinction to which the Doctor has called our attention. It is an awkward symptom to elicit, and, in order to be sure that it is elicited, an examination should not only be made in the way described, but a rectal examination should be made as well. I have been in the habit of excluding the examination for this sign except in cases in which there might be involved some medicolegal question with subsequent testimony in court.

As to the relative importance of the various symptoms of early pregnancy, I was rather surprised to find the softening of the cervix put into such a comparatively unimportant position. Its importance, of course, depends upon the tactile sense of the examiner. It might be detected by one examiner and overlooked by another. Among the signs on which I depend, it holds an important place.

Another important sign of pregnancy and one which I do not remember having heard mentioned is the eccentric hypertrophy of the cervix, without which I do not think pregnancy is possible, and by the absence of which we are often able to say that pregnancy could not exist in a certain case. If, on the contrary, the cervix is much broader and softer than normal, pregnancy is at least probable. I have learned to attach much importance to this sign of early pregnancy.

In regard to the change of color in the genital tract, my experience agrees with that of the reader of the paper. It is a valuable symptom when obtainable, but unfortunately it is lacking in a considerable percentage of the early cases, the very cases in which the diagnosis is most difficult and most desirable. Here again there is a fact about the change of color to which the reader of the paper did not refer and which I do not see mentioned in many text-books. As pregnancy advances the blue or purple discoloration of the genital canal is sometimes absent, but I have never seen a case in which, if this blue discoloration is absent, there is not a transformation of the pink of the mucous membrane of the introitus and vestibule into a bright scarlet. I once had an artist inspect a large number of women in all stages of pregnancy and it was this artist with a keen eye for color who first directed my attention to this peculiarity.

In conclusion I would like to thank the reader of the paper for introducing a subject, the study of which can not fail to be useful to us all.

Dr. Edward P. Davis: I desire to add my appreciation of Dr. McDonald's interesting and important contribution. In an examination and diagnosis of early pregnancy a systematic procedure is of the utmost importance. I do not understand that the discussion to-night is necessarily limited to the pelvic organs.

The head, face and neck of the patient should be investigated to determine the enlargement of the thyroid, alterations in the pupils, abnormalities in the color of the face and the presence or absence of abnormalities in the nose, throat and mouth. In some normal pregnancies the thyroid is slightly enlarged, while in cases of pseudocyesis the thyroid is often considerably diseased. The action of the heart is readily excited during pregnancy and hemic murmurs are often present in the early months.

In the abdomen the intestine is often more or less distended with gas which may be exceedingly annoying. In toxemic patients this distention is frequently chronic. We may be unable in early pregnancy to distinctly outline the uterus by abdominal palpation. Care should be taken to have the patient's bladder emptied thoroughly before such examination.

One of the most significant symptoms of early pregnancy in gouty and neurotic women is a generally irritable condition of the mucous membrane of the nose. In one such case the patient was greatly disturbed, and there was no sign pointing to the cause of the condition as pregnancy, which was so early that a positive diagnosis could not be made. The patient had an abortion and the irritable condition of the nose at once disappeared.

As regards the sign described by Dr. McDonald, I have not clearly defined it, but have been accustomed in examining patients to search for softening in the lower uterine segment and to consider this as strongly suspicious of pregnancy. In making examinations this phenomenon is usually associated with enlargement of the uterine body and the two are taken together as practically constituting Hegar's sign.

Very few patients in early pregnancy escape disturbances in metabolism. The solid matter of the urine is altered in its normal proportions. The blood shows a moderate leukocytosis. There is either improved or diminished metabolic activity.

So far as color signs in the genital canal are concerned in my experience they have been suggestive only, but not decisive. Alterations in mucous membranes may result from chronic infections and in some cases from gout.

When the examination of the uterus gives several signs significant of pregnancy, and the general examination of the patient coincides, I am willing to state that the patient is probably pregnant, but a positive assertion must be withheld until positive evidence of fetal life can be obtained. In listening for heart sounds in the early months of pregnancy, the patient must be at absolute rest, and the physician must not be disturbed by external noises and all the conditions must be distinctly favorable, otherwise the effort may be fruitless.

This discussion has not entered upon the field of ectopic gestation, nor of the diagnosis of pregnancy complicated by the death of the ovum. Both of these subjects offer a large field for discussion. There is one condition in which the two join; namely, a retroverted, gravid womb containing a dead ovum, and large blood clot. It is under these conditions often impossible to distinguish between intrauterine pregnancy with dead ovum and blood clot and womb retroverted, and ruptured ectopic gestation with pelvic hematocele.

Dr. Richard C. Norris: I have been interested in what Dr. McDonald has had to say to us. Personally, I feel that the positive diagnosis of early pregnancy will always be a very difficult matter in spite of the most advanced refinements in our diagnostic means. The inferential signs we all take into consideration in studying individual cases. One of the most practical points is to examine the patient at intervals and repeatedly before we come to any conclusion in a doubtful case. Women differ greatly in their anatomical peculiarities, such, for example, as the flexibility or eccentric enlargement of the cervix, and I think we are all forced to reserve even a presumptive diagnosis until we have seen the patient on more than one occasion. I must confess that I have yet to make an *early positive* diagnosis by means of any of these early diagnostic signs. I have had to wait until time and other signs made the diagnosis positive.

I have studied many cases of early pregnancy for Hegar's and Braxton Hicks' signs and I believe that the personal equation of the examiner is an important factor, and a part which may feel soft one day may not at the next visit.

I think Dr. McDonald has done some careful work in exploiting flexibility or thinning of the lower uterine segment as an early sign of pregnancy. Personally I have not felt justified to conclude that there was thinning of the lower uterine segment without recto-vaginal examination. The sign which has practically helped me most is the change in the shape of the uterus presenting what we term a jug-shaped uterus. I shall be interested to study the signs pointed out to us by Dr. McDonald, particularly that in reference to flexibility. I believe, however, that we shall find that women differ in this as in other pelvic peculiarities, and that these individual peculiarities render such signs of varying degrees of value.

Dr. Charles P. Noble: At or before the tenth week I feel that the clinical signs seldom help us to make a definite diagnosis. I was surprised to find that the sign which helps me greatly was not alluded to at all. The "jug sign" of pregnancy has been most helpful to me in the early diagnosis of pregnancy. The diagnosis is quite easy in the sixth to eighth week by means of this sign. If a physician happens to know the peculiarities of the uterus of the woman, the diagnosis I think is almost always perfectly easy in the sixth or eighth week. This is also true of almost all primiparæ. In multiparæ it is not easy. The presence of morbid conditions necessitates a more guarded diagnosis.

The diagnosis of early pregnancy rests upon certain physical conditions. The corpus uteri grows to accommodate the ovum and extends out from the cervix in all directions corresponding to the relation of a jug to its neck. As the ovum is semifluid the pregnant uterus yields a feeling of semifluctuation. Where the pregnancy is normal and the ovum alive I think in 90 per cent. of cases the diagnosis is very simple.

The difficulties present themselves in cases in which the ovum is dead or where there are abnormalities in the pelvis. In the clinic which I have superintended all these years the proportion of errors on the basis of this sign could be almost disregarded. The irregular enlargement of the uterus referred to by Dr. McDonald I think is more characteristic of a dead ovum than of a normal pregnancy.

My own experience is that Hegar's sign is of little value before the twelfth week so that, so far as early pregnancy is concerned, it is of little value. After the twelfth week it is quite easy to elicit, and it can then be elicited without rectal examination. Like the other gentlemen, I shall be glad to study the question of the value of the special signs referred to by Dr. McDonald.

Dr. George M. Boyd: I should like to emphasize the statement of Dr. Norris regarding the necessity of repeated examinations. It is difficult for me in some cases to make an early diagnosis and in some of the early cases I have found it only possible after repeated examinations. In this way one is able to note any slight change in the size of the uterus. Hegar's sign I have found of value and also the change in the shape of the upper segment of the uterus.

I feel that the paper and discussion are very timely. Too much care and study can not be given to the early diagnosis of pregnancy. We all see repeatedly errors in diagnosis. It has been my experience recently to find the diagnosis of uterine and ectopic gestations recently confounded. In two cases this fall a diagnosis of uterine pregnancy was made although there was a distinct mass at the side of the uterus and the pelvis was filled with blood. The signs of ectopic gestation were very distinct but were overlooked in the hurry of the examination.

Stated Meeting, Thursday, March 7, 1907, the
president, Dr. Wilmer Krusen,
in the Chair.

Report of Five Cases of Premature Separation of the Normally Situated Placenta. Dr. William R. Nicholson reported two maternal and five fetal deaths. All were associated with frank hemorrhage. Three were emergency cases and the condition of the urine was unknown. The two cases in which urine examinations were made were free from albumin.

The chief diagnostic points to be mentioned are collapse, pain of a varying degree of severity, absence or weakness of labor pains, distention of the uterus (in complete or partial concealment), uterine hemorrhage, accessory tumor, serous vaginal discharge. It is to be remembered that the presence of some of these signs, as collapse, really means that the case has probably passed beyond aid, and so it is essential that the practitioner be on his guard to detect the earlier signs of the condition which, while not at all diagnostic, will serve to put him in a position to act intelligently if the later developments confirm the suspected diagnosis. These signs are the presence of pain of an aberrant type and vaginal bleeding, the former being the more important sign. Any woman in the latter part of pregnancy presenting pain in the abdomen which is not typical of labor should be watched with the greatest care until the true cause can be ascertained.

The treatment, if the patient is in labor, is delivery as rapidly as is consistent with the safety of the woman. If not in labor, the uterus must be emptied by the conservative methods if the severity of the symptoms warrant, but in the more serious and, fortunately, rare cases, in which, in the absence of labor, there is an association of marked symptoms of shock, and a rigid unobliterated cervix, either the vaginal or the classical Cesarean section should be performed.

Remarks on Repeated Cesarean Section, with Report of a Case, by Dr. G. M. Boyd. In a previous paper Dr. Boyd has reported fourteen successful Cesarean sections, among which were three cases of repeated section. In this paper he reports a fifteenth successful case, it being the fourth repeated section. He states that the mortality of this operation in general is now but five or six per cent., while in his own series it was nil. In repeated section, he thinks that it is usually lower than in the first operation. He agrees with Monroe Kerr regarding the indications for sterilization, especially by hysterectomy, and those for Cesarean section. He then mentions the study of the dangers of repeated Cesarean section made by Wallace, as well as that of Kerr, who thinks that repeated sections show a very low mortality.

Fruhinsholz, Sinclair and Wallace are quoted concerning the dangers arising from the formation of adhesions in such cases. The former thinks that such adhesions, being contracted immediately after labor, leave the uterus in a more normal position than do those contracted after an operation to fix the nonpregnant uterus to the abdominal wall. Sinclair and Wallace even recommend a method of suturing uterine wounds that will favor the formation of adhesions, there being less likelihood of rupture of the scar, and it being possible to perform a subsequent operation without opening the peritoneal cavity. The writer believes that, as time goes on, with the use of a more nearly perfect technic, uteroabdominal adhesions will become less frequent and less extensive.

He does not believe that the danger of uteroabdominal fistula need be greatly feared by the advocates of the conservative operation, although such an accident must be taken into consideration. In twelve cases collected by Richard Werth, ten of the ruptures occurred before the onset of labor and, hence, could not have been due to the pains. Werth believes that, when the placenta is attached over the site of the scar, the wall at that point is weakened by the changes in the uterus due to placental implantation; so that the growth of the fetus may stretch the musculature at the site of the scar.

Reference was made to a case reported by Tull, in which a second Cesarean section was performed on a patient with rupture of the uterus at the site of the first operation. The diagnosis of rupture was not made before the opening of the abdominal cavity, and the patient did not present the usual picture of shock or severe hemorrhage. The writer concludes that the danger of rupture is real. He thinks that if the patient is not sterilized the uterine wound should be closed with care, and, in any subsequent pregnancy, the patient should be carefully watched.

In preparing the patient for operation, the writer believes in washing the vagina very carefully with lysol solution. He usually makes the incision below the umbilicus, and only sufficiently large to enable him to carry out the further steps of the operation. In closing the wound, he always uses a fine silk suture, because it is strong and easily sterilized.

Transactions of the Allegheny County Medical Society.

A CASE OF MALINGERING, WITH SOME PRONOUNCED SYMPTOMS AND SIGNS OF HYSTERIA.

BY THEODORE BAKER, M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, February 19, 1907.)

Case of Mrs. ———, aged twenty-nine, married. Patient came to my office November 9, 1905, complaining of having missed her menstrual period for October, and having much pain in her back and ovaries. Thought she was pregnant.

Past history: She was married at age of nineteen; has had three children, ages ten, eight and four years, all normal births and all living and well. She had a voluntary miscarriage of four months three years ago. General health has always been good; no serious illness of any kind.

Family history: Negative except father died of tuberculosis.

Menstrual history: Menses began at age of seventeen, were irregular and painful until married, two years later. She never missed a period until four years ago.

Since last child was born, four years ago, her menstruation has been very irregular and painful and would frequently miss a month. When sick the flow would last about five days and was not excessive.

During this period of four years, when she missed a period she would, at the time, have the molimen; but said nothing would start the flow. Very frequently about five days to a week after missing a flow she would get very sick, and vomit large quantities of dark, thick, bad smelling blood; or pass large clots from vagina; sometimes passing blood from the bladder, after which there would be retention of urine for several days, requiring the use of a catheter. The amount of blood vomited, or passed from the vagina during these attacks, would be from half a pint to nearly a quart. Attacks would last about five days to a week, with recurrences often. Sometimes six attacks of hemorrhage in a year. Her husband told me that her physician sometimes thought she was going to bleed to death, because no medicine seemed to stop the bleeding from the stomach; and packing the vagina with gauze would relieve her a little only while it was in. During last two years there were often two attacks in a month.

Present history: Patient first seen at my office, November 9, 1905. She said she had not menstruated in October, and was a week past her time for November, and thought she was pregnant.

November 12, 1905, I was called to see her at 9:00 A. M. Found the patient in bed, apparently very sick and vomiting much dark, thin, bloody fluid. While I was there she vomited about four ounces with some effort. She said the attack had started at midnight and had been very severe, with much pain in the stomach and womb. She seemed much distressed and thought she was going to die.

Examination showed her to be a woman of good build and with good color of skin and mucous membranes. Pupils were somewhat dilated, but responded well to light and accommodation; pulse, 90 to minute and of good quality; temperature, normal (98.5 degrees). Chest examination was negative. Abdomen was full and round, soft, no acute tenderness anywhere; no mass of any kind to be felt; liver not palpable; some pain on deep pressure over right ovary.

Pelvic examination showed everything in normal position and of normal size. There was no bleeding from uterus; some leukorrhea. The physical examination was interrupted frequently by hysterical outbreaks and vomiting of blood.

Treatment: Adrenalin and citrate of magnesia. I was called again at 7 P. M. and found she had vomited much blood during the day; and was now suffering much pain from retention of urine. I ordered hot sitz baths and hot applications and douches. At 10 P. M. was called to catheterize her and withdrew about a pint of clear urine.

November 13 (next day), saw patient at 9 A. M. She was cross and irritable; had spent a restless night, and had vomited only a few mouthfuls of blood. Complained of painful retention and when catheterized about two ounces of dark thick blood were withdrawn from bladder. Urethra was very tender.

In spite of the apparently great loss of blood her general condition was good and there were no signs of secondary anemia.

I ordered an enema as bowels had not moved for two days. As I was leaving the house the servant, who was to give the enema, told me there was some "red stuff" in the tube of the syringe.

At 7 P. M. she again complained of painful retention and begged me to relieve her. As the "red stuff" in the fountain syringe, which I failed to obtain for examination, had aroused my curiosity and my suspicions, I was glad of an opportunity to catheterize her, hoping that some light would be thrown on the case. About a half pint of clear normal urine was withdrawn.

November 16. There was no vomiting of blood for two days; "Much pain in 'small' of back and womb." Cervix was dilated a little and application of iodin was made; but it did not start any flow.

December 15. Normal menstruation lasting five days.

December 29, the patient complained of pain in bladder and frequent, scanty, burning urination. On examination vulva was very red and inflamed; urethral mucosa much congested and presented minute bleeding points. Examination of urine sent to office later looked as though diluted with milk. No microscopic examination was made; but it did not look as if it contained pus. There was no blood. Urine sent to office next day was bright and contained much blood. It did not have a urine odor. In the bottle containing it was a piece of membrane about two inches square and contained some fat. This looked as if it had been taken from the intestines of a chicken.

The following day I saw her husband and told him I did not know what was the matter with her except that she must be malingering. The blood (?) in the fountain syringe and the curious specimen of urine, also the lack of symptoms of such loss of blood, were all very suggestive.

I told him to look closely about the house for beef blood or chicken blood, which I thought she might be using. He did, and found none. He did not think she would do such a thing.

January 18, 1906, she complained of usual pains; but she began to menstruate a little.

On January 20 and 21, patient called me to home several times and showed me large clots of blood in the bedpan which she said "had come from the womb." I examined her and found the vagina full of dark clots of blood which I cleaned out; after removal of clots there was a slight flow of bright blood, very scanty, from cervix. During these two days I saw her morning and evening. In the morning the vagina would be cleaned of clots and packed with gauze which I removed in the evening and found stained pink, like a normal flow would do.

One peculiar feature of this attack was that there would be no large clots passed at night when her husband was at home; but they seemed to form after five o'clock in the morning. Her husband would seem surprised to come home and find her in such a condition.

This attack lasted from January 20 to 29, during which time she passed much blood; and every attempt to check it was a failure. Her general physical condition remained good and she showed remarkable strength for one so sick.

In February, March and April, she menstruated at the usual time. That in March was accompanied for two days with passage of huge clots as in January.

During March and April she came to the office very frequently complaining of "bladder trouble." The vulva was often much inflamed and urethral mucosa congested and bleeding, appearing as if irritated by some instrument.

May 19, at 7 P. M., while patient was in chair having an application made to the urethra, she suddenly jumped to her feet, bright red blood streaming from her mouth in large quantities. She kept her hand held tightly over the epigastrium and complained of much pain there. During the hour she was in the office she vomited fully a pint of bright red blood, became some what pale looking in the face and seemed quite weak, but was able to walk home, a distance of two squares. She told me, in the office, that she was again a week past her menstrual period and had had no flow.

Next day at 9 A. M., I was called to the home hurriedly; found patient in bed, vomiting bright red blood profusely, and in a markedly hysterical condition. She was holding her body stiff, throwing her arms wildly about, with fists closed and crying loudly for help. She pretended not to know any of those near her. Attempts to quiet her forcibly made her more violent. Finally, after getting all of the family out, I got her quieted. She was very anxious to know if she was going to die.

On examination her general condition was found good; color, good; pulse 100 and good quality; temperature, 98; strength, good. Examination of chest and abdomen was negative, except some tenderness on deep pressure over the right ovary. No pelvic examination.

Sensation to touch was normal except left forearm which was anesthetic; pain sense, to prick of needle, was gone in arm up to shoulder and legs to hips. Visual field (next day) was normal for white. Knee jerks and other tendon reflexes could not be obtained.

Patient was kept in bed all day with some one constantly watching her. Vomiting ceased in the afternoon and did not recur; has not recurred since, now nine months past.

May 21, patient forcibly kept in bed. Complained of painful retention of urine. I would not use a catheter on her and prohibited her from using one. But her husband catheterized her before morning and had to do so daily for the next ten days.

Before leaving the home on the day previous, I had told a sister that they need not be alarmed because she was in an hysterical condition and that she would soon be all right. I asked her if she had ever seen the patient have anything like blood, and I was informed that she had recently had a jar of beef blood sent to the house, but they did not think she drank it. Two weeks later, after watching carefully for beef blood in the house, her husband found a fresh jar full. She confessed, under some compulsion, to drinking it for the past four years for her health. Later she told me she had used it to feign hemorrhage from the uterus.

Subsequent history: Since May 20, the patient has vomited no blood, nor has passed any from vagina nor bladder. From May until present date (February, 1907) she declares she has not menstruated. In October she came to my office to know whether she was pregnant. She said her abdomen had been enlarging greatly, and that she could now feel "quickening." Said her breasts were larger and painful.

On examination her abdomen was very much enlarged, as it would be at five months' pregnancy. Palpation was useless as there was so much muscular rigidity. Abdomen was tympanitic. Pelvic examination showed organs in normal position and of normal size. She was assured that she was not pregnant.

Since then the abdomen has become normal. The enlargement was due to contraction of muscles of upper part and a "bulging" of lower part. I refused, also, to treat her any more for the tender urethra and now she has ceased to complain about it. I told her, right out, to cease abusing herself, which I am sure caused this trouble.

This case is of interest in that some attacks simulated quite nicely "vicarious menstruation"; others, ulcer of stomach and others, some pelvic disease causing metrorrhagia; also the imagination of pregnancy with enlarged abdomen. One interesting feature is the condition of analgesia which at present involves head and entire body, one of the signs of hysteria in the case.

LOUIS PASTEUR.

BY C. C. WHOLEY, M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, March 19, 1907.)

The medically trained mind, accustomed to its family history notations, inclines very naturally to the time honored custom of approaching the lives and works of men with reference to their ancestry and birthplace.

Applying this manner of introduction to Pasteur, we learn that the little village of Dôle in Eastern France, was the place of his birth. The time was December 27, 1822. His ancestry for many generations lived in the open plains at the foot of the Jura Mountains near Switzerland. They were simple peasants living in close communion with nature and nurturing her soil for their modest maintenance. The three generations immediately preceding Pasteur lived by the tannery trade. In the domains of his father's tanning establishment at Arbois, a near-by village whither the family had moved, the boyhood of Pasteur and his comrades found much to afford high entertainment and interest. His father had been a brave soldier in the revolutionary wars of 1812. A cross of the Legion of Honor conferred upon him by the Emperor Napoleon told something of the make of man he had been in those wars. The thrilling stories of those troublesome times to which the young Louis eagerly listened at his father's fireside, came mainly from companions who had served with his father and not from this rather reserved, dignified parent. Pasteur's village school days were not unusual. For brightness in his studies he was not rated above the average. Industrious and conscientious, he nevertheless keenly enjoyed open air games, and was ever ready for fishing and hunting excursions.

He early obtained the sobriquet of artist owing to his fondness for sketching and drawing,—a title, indeed, which was not much relished by his father. He used to delight his companions and neighbors by sketching their portraits, some of which are still shown with pride by the old inhabitants. "What a pity he has buried himself amongst a heap of chemistry," remarked an old lady of Arbois many years later. "He has missed his vocation, for he would some day have really succeeded in making a name as a painter." Some of his pastels are said to display marked artistic ability.

Pasteur set out for Paris at the early age of sixteen, in order to prepare himself for entrance into the Ecole Normale, the renowned institution for training young professors. His stay in Paris was not long, however. The home-leaving had been marked by real sorrow. His home life had been very beautiful and his nature was very tender and affectionate. Pasteur could not throw off the distressing nostalgia that seized upon his young heart in a strange land. He was taken back to Arbois, where, for a time, his colored chalks seemed to satisfy him. But the old ambitions soon returned, and locking away his brushes and fishing tackle, we find Pasteur soon launched upon that busy life of Herculean labors, from which his rare genius and indomitable energy seldom afterwards gave him pause or respite. Entering college in a near-by town, his work now became all important, in view of larger dreams which he hoped to realize in that great center of learning, Paris. He early foreshadowed what an Englishman has aptly defined as genius; namely, "An infinite capacity for taking pains." Remarkably cautious, "He never affirmed anything of which he was not absolutely sure." In 1842, Pasteur was declared eligible for the examinations in the Ecole Normale, and there he soon entered upon his work with that vim and painstaking perseverance which so characterized his whole after life. In a letter, he writes, "Do not be anxious about my health and work . . . . I need hardly get up until 5:45; you see it is not so very early . . . . Surely you must see that I am not homesick this time."

We contemplate with wonder the life of brilliant discoveries and epoch-making achievements now entered upon by Pasteur. From this time on his unwavering devotion to scientific pursuits and his constant, heroic toiling, forms indeed a sublime picture. He seems never to have paused in his purpose, never to have hesitated in his enthusiastic devotion to scientific research. We can take but a cursory glance at some of the more marvelous of his beneficent and far-reaching labors. In Pasteur's hands, even what are to many of us the most uninteresting subjects became animated, almost dramatic. His enthusiasm is contagious. Like a young friend of Pasteur's we are thrilled by his earnest, life-giving description of even such a prosaic looking object as a piece of Iceland spar.

The study of chemistry became a passion now with Pasteur. The first laurels crowning his scientific career came to him while engaged in that particular department having to do with crystals or crystallography. It would be interesting to follow the various and tedious steps leading to his wonderful discovery concerning the effect of the polariscope upon substances in crystalline form. He solved the problem of the difference in behavior towards polarized light of the solutions of the two tartaric acids, a problem which had baffled the world's greatest chemists for previous generations.

Long hours of persistent search had been spent in his laboratory, hundreds of careful experiments tried, when one day, what seemed almost a final test was to be made. The solutions were scrupulously prepared and submitted to the polariscope. "With anxious and beating heart he proceeded to this experiment." "I have it," he exclaimed. "His excitement was such that he could not look at the apparatus again; he rushed out of the laboratory, not unlike Archimedes. He met a friend in the hallway, embraced him, and dragged him out with him into the Luxenbourg Gardens to explain his discovery."

"He throws light upon everything he touches," exclaimed the aged chemist Biot, and the greatest intimacy and mutual admiration sprang up between this whitehaired scientist of seventy-four and the youth, Pasteur, twenty-five years of age.

Received with marked skepticism at first, congratulations later came to Pasteur from all sides. One whole sitting of the Academy was devoted to his name and growing achievements. "That fascinating and fertile field of chemical science," now known as stereo-chemistry, the theory of the arrangement of atoms in space, culminating in the artificial synthesis of many substances, "is the direct result of Pasteur's fundamental researches on the tartaric acids."

As dean of the Faculty of Sciences at Lille, we next find Pasteur with his characteristic zeal and energy engaged in the serious study of fermentation.

Fermentation processes were generally regarded as chemical phenomena up to this time. An idea of the prevailing opinion is summed up in these words of Liebig: "Beer, yeast, and in general all animal and vegetable matters in a state of putrefaction impart to other bodies in contact with them the state of decomposition in which they are themselves." Years of the most searching and variously modified experiments now came to pass, while Pasteur patiently and boldly upset all preconceived views regarding this important subject. Fermentation processes were elaborated in detail (alcoholic, lactic, butyric and others) with minute accounts of their causative organisms. Artificial culture solutions were now first inaugurated, "and that path was first indicated which gradually expanded into the fascinating science of bacteriology."

Where truth was at issue Pasteur dared everything. Even his closest friends endeavored to dissuade him from his daring attacks upon the long cherished theories regarding spontaneous generation. But such a belief as spontaneous generation could not survive the unceasing battery of Pasteur's convincing experiments and unassailable array of facts. Opposed to them was an accumulation of grandiose verbiage and vague speculations, formidable for the most part in their heritage of tradition and authority. The whole history of spontaneous generation is full of interest. Virgil asserted long ago that bees originate in the carcass of a young bull. "Van Helmont actually supplies the prescription for producing by spontaneous generation the domestic mouse. His formula consists in squeezing some soiled linen into the mouth of a vessel containing some grains of wheat, which arrangement gives rise to the transmution of the wheat into mice in the course of about two days. The mice so generated are said to make their appearance in the adult state, both sexes being duly represented."

We must hurry over many important incidents of this period (the discovery of anerobic organisms, demonstrations before the Academy of Sciences, prizes and honors received, studies on vinegar and wine, with their momentous industrial and scientific significance) to say a word in connection with Pasteur's researches on diseases of the silkworm. Disastrous conditions were besetting the manufacturers of silk. Thousands of the population of France were suffering great poverty as a consequence. The whole art of cultivating silkworms or sericulture was a new one to Pasteur, but, with his patriotic zeal and scientific zest, he did not hesitate to attempt a solution of his vexing problem. Under Louis Phillipe the profit to France from this industry amounted to twenty million dollars. The mulberry tree on which the silkworm grew and fed was called the "Tree of Gold." All these riches had fallen away. Five years of untiring toil were devoted to the struggle against silkworm diseases, and against the apathy and disheartening resignation which had taken possession of the people. The discovery of the corpuscles causing the disease known as pébrine and of facts bearing upon another disease, flachérie, with new methods devised for silkworm culture, transformed the whole picture, and revived this once flourishing industry from stagnation and death to proportions even beyond its former place of national pride and prosperity.

The discovery of spore formations in microörganisms was one of the incidents of this chapter of Pasteur's labors.

We pass over Pasteur's important studies on beer, to which his patriotism brought additional impetus, to have his own country unsurpassed in this art.

The following words of Lister give us some idea of the light in which Pasteur's studies upon infectious diseases are regarded: "Allow me to take this opportunity to tender you my most cordial thanks for having, by your brilliant researches, demonstrated to me the truth of the germ theory of putrefaction, and thus furnished me with the principle upon which alone the antiseptic system can be carried out." And again, "Truly there does not exist in the entire world an individual to whom the medical sciences owe more than they do to you."

"The hospital now took as much share in Pasteur's life as the laboratory. No one knows what feelings of repulsion Pasteur had to overcome before visiting patients and witnessing postmortem examinations. His sensibility was extreme, and he suffered mentally and physically from the pains of others; the cut of the bistoury made him wince as if he himself had received it. He often went home ill from operating theaters. But his love for science, his desire for truth was the stronger; he returned the next day." A marvelous diminution in the mortality from child-bed fever and hospital gangrene was one of the early blessings to mankind following these investigations on pathogenic organisms.

Pasteur is almost as famous for his discoveries for the prevention of diseases among the lower animals as for those attacking human beings. It was he who learned the nature of the disease chicken cholera and ways of preventing its terrible epidemics among domestic fowls. His name is indissolubly connected with the brilliant results accomplished in stamping out the dreadful disease of splenic fever, or anthrax or charbon, as it is sometimes called, which was at one time so destructive of life among horses, oxen, cows, sheep and other domesticated animals. Pasteur found a vaccine which would prevent animals from contracting splenic fever when exposed to it; "this was only accomplished after long weeks of trials, tests and counter tests." A great public exhibition was made in the presence of agricultors, physicians, apothecaries, and especially veterinary surgeons, most of the latter being very skeptical of the results predicted by Pasteur. These experiments were conducted on a large farm outside Paris, and several innoculations had to be made. The greatest excitement prevailed, and the suspense reached its climax as the day approached for the final inspection of the animals experimented upon. Sheep and cows were used. Some of them received the vaccine and others did not. Some days later they were all exposed to the disease. Pasteur claimed that all those animals which had been vaccinated would live and that the ones not vaccinated would die.

His predictions proved correct in every detail. No success had ever been greater than that crowning these carefully conducted experiments. "The veterinary surgeons, until then the most incredulous, now convinced, desired to become the apostles of his doctrine. One of the most strenuous opponents generously came forward and declared that he was a converted and repentant sinner." On all sides it was felt that something very great, very unexpected, justifying every sort of hope, had been evolved. The most enthusiastic joy took possession of Pasteur's friends. Invitations for lectures came from every part of the country. The Grand Cordon of the Legion of Honor was offered Pasteur in recognition of his great discovery. As one author says, there was a general hosanna in Pasteur's honor.

It was during Pasteur's efforts to combat the evil disturbances which were crippling the wine industry, that simple but invaluable process of partial sterilization, now known as Pasteurization was first employed with success. After having tried various antiseptics without encouraging results, Pasteur determined to have recourse to low temperatures, something which would be inimical to bacterial life, but which would not impair the bouquet or other delicate properties of wine. We now know the wide applicability of Pasteurization to various perishable food stuffs, perhaps the most important being the subject of our symposium this evening, milk.

We can only mention some of the great events of public honor that came into this great, busy man's life. When years ago he had been royally entertained by the Emperor and Empress of France, their palace of Compiègne was given over to the most lavish hospitality for a whole week. Nothing would do but that Pasteur should bring his microscope to the private apartments of the Emperor and Empress and explain to them his theory on germs and fermentation and other scientific matters. A gorgeous spectacle occurred in 1867 when Pasteur was awarded the prize medal by the Academy. The Tuileries Gardens, the Place de la Concorde and Champs Elysées were brilliantly decorated and illuminated, and gaiety and military splendor contributed to the homage being paid Pasteur and other celebrities. In 1882 Pasteur was made a member of the Académie Française. This is the highest acknowledgment France can offer for intellectual attainment,—for masterly achievement in letters, the arts or sciences. This august body of savants is composed of but forty members and represents the pioneers of learning, and though it is a custom that candidates for membership must call on those academicians already composing the society, Alexander Dumas gracefully declined to have Pasteur call on him, saying, he would not allow Pasteur to come to him, but would go himself and thank Pasteur for becoming a member of the Academy. Another member wrote to Pasteur that when such men as he consented to enter a society, all the honor was for the society.

"A reception at the Académie Française is like a sensational first night at a theater. A special public is interested days beforehand in every coming detail. Wives, daughters, sisters of academicians, great ladies interested in coming candidates, widows of deceased academicians, laureates of various Academy prizes, the whole literary world is agitated to obtain tickets." Merely a paragraph from M. Renan's address of welcome to Pasteur must suffice for us; after speaking for some time, he added: "But apart from the ground of the doctrine, which is not within our attributions, there is ever a greatness on which our experiences of the human mind give us the right to pronounce an opinion; something which we recognize in the most varied applications, which belongs in the same degree to Galileo, Pascal, Michael Angelo or Molière, something which gives sublimity to the poet, depth to the philosopher, fascination to the artist, divination to the scientist. That common basis of all true and beautiful work, that divine fire, that indefinable breath which inspires science, literature and art—we have found it in you, sir—it is genius. No one has walked as surely through the circles of elemental nature; your scientific life is like unto a luminous tract in the great night of the infinitesimally small, in that last abyss where life is born."

We might devote our whole time this evening to a consideration of the honors alone which befell this great man; not France only, but the world now acknowledged his achievements and their far-reaching influence. But we must hurry on to a word on Pasteur's final triumph, the crowning achievement of his declining years. They had to do with that desperate disease, hydrophobia, known as rabies, among dogs and lower animals. Hydrophobia had claimed its thousands of victims during hundreds of years. Man's efforts seemed hopeless in baffling its harrowing and destructive symptoms. Men and animals died most pitiably and violently in the throes of this awful malady. Time and health and risk to life even, were the noble offerings made by Pasteur in his eagerness to find a way of staying such havoc. Ferocious dogs, victims of the disease, were experimented upon, their saliva was used and blood taken from them closely scrutinized to find the cause of the disease. Experiments were multiplied, when finally the brain, or rather that part of the brain, the medulla oblongata, was found to contain the poison in its greatest virulence. This led to the employment of injections on successive days of increasing strengths of rabitic brain emulsions for the prevention and cure of hydrophobia—the anti-rabitic treatment familiar to you all, and now adopted throughout the world. The names of many of Pasteur's collaborators, and students of the Pasteur Institute are renowned, and need but to be mentioned to medical and scientific men to recall the achievements with which their names are associated. Dr. Roux, famous for his investigations in the treatment of diphtheria, Calmette, who made wonderful researches upon the nature of serpent's venom and the artificial production of immunity; Yersin's studies upon plague and anti-plague serum, Chamberland of Chamberland-filter fame; Duclaux, Metchnikoff and others might be named, who assisted in the great forwarding labors of their master, and have since nobly upheld the fame of their renowned alma mater. This Institute Pasteur was inaugurated in 1888 by President Carnot with elaborate ceremonies. Kings and queens honored Pasteur. His ripening years seemed fittingly rounded out in glory. Great endowments came to his institute from all parts of the world. He had got to be a world hero. Let us quote part of a personal impression of Pasteur written by a close acquaintance a short time before his death:—

"Every one knows that Pasteur is short, that since 1870 his leg and arm smitten by apoplexy are somewhat stiff, and that he drags one foot much like a wounded veteran. Age, illness, the heavy labors of so many years, the bitterness of conflict, the intense passion for his work, and, lastly, that prostration which follows triumph, have combined together to make a grand thing of his face."

His investigations and active scientific interest continued almost to the day of his death in 1895. The good wrought by this man can never be estimated, and I feel that his lofty character has been as productive of good of a spiritual nature as his discoveries have been in alleviating the distress of death and the torture of pain. He was devoted to young people, and ever lent his influence in helping them to ambitious efforts and in their noble struggles towards attaining ideals. He is the best adherent to his own lofty words: "Blessed is he who carries within himself a God, an Ideal, and who obeys it."

"The busy loom
Glancing with silk, the teeming herd, the bloom
Of purpling vineyards, and the grateful eyes
Of souls reprieved at Death's most dread assize,
Shall make eternal gladness round his tomb."

"The vital purposes in medical organization are the maintenance of an ethical standard and the diffusion of medical knowledge."

Reports of County Societies.

ADAMS—April.

The Adams County Medical Society held its regular quarterly meeting, April 8. The principal feature of the meeting was a paper on the "Importance of Early Diagnosis of Tuberculosis," by Dr. A. Barr Snively of Blue Mountain Sanatorium, Blue Ridge Summit.

Henry Stewart, Reporter.

CENTER—April.

The Center County Medical Society held an anniversary meeting in Bellefonte, on Tuesday, April 9, to celebrate the thirty-second year of its organization.

Fifteen members were present, two nonmembers from the county, and seven visitors from other county societies,—making twenty-five in all.

Dr. Edward Martin of Philadelphia delivered an address on "The After-treatment of Surgical Cases," which was replete with sensible and practical suggestions, some of which were entirely new to his audience. The subject was further discussed in an interesting manner by several of the guests and members of the society, after which those present repaired to the Brockerhoff House, where dinner was served. Many toasts were responded to, and good fellowship prevailed.

From both a scientific and social point of view it was a most interesting and delightful meeting.

J. Y. Dale, Reporter.

CUMBERLAND—April.

The regular quarterly meeting of the Cumberland County Medical Society was held at the Board of Health rooms, Carlisle, Tuesday, April 9, at 6 p. m. The following members were present: Drs. Allen, Douglas, Emrick, Kisner, Lefever, Langsdorf, Long, Neely, Phillipy, Pilcher, Plank, Preston, Shepler, and Spangler.

After the business meeting Dr. H. A. Spangler read an interesting paper on "The Mortality of Childhood," in which he stated that the average death rate of Carlisle for ten years is 18.7 per thousand. The approximate death rate of infants in Carlisle is about 28 per cent. of the entire death rate. Infant mortality is not alone a question of sanitation, housing or surroundings, but becomes a question of motherhood. The mother should be instructed how to nourish the child. A sanitary inspector would assure pure, clean milk to artificially fed infants.

The society adjourned to meet in July, at Mt. Holly Springs.

A banquet at the St. Charles Hotel followed.

Hildegarde H. Landsdorf, Reporter.

DAUPHIN—March, April.

A meeting of the Dauphin County Medical Society was held Tuesday, March 5, with Dr. C. E. L. Keene in the chair.

Dr. W. T. Douglass read a paper on "Pneumonia," which was discussed by the members. Dr. Douglass has had a number of cases of a typical onset of pneumonia aborted by the use of tincture of aconite (U. S. P.). He felt sure that in a large percentage of cases the careful use of that drug would cut short the inflammatory process or abort it altogether. He has not had any experience with the alkaloidal dosage but thought it would do the same.

Dr. C. E. L. Keene presided at the April meeting of the Dauphin County Medical Society.

Dr. D. J. Hetrick read a paper of unusual interest on "The Business Side of Medicine." The student gets all the theory he needs in college, but he is taught very little about the business side of the profession, and hence he starts with a handicap. Dr. Hetrick emphasized that all young practitioners should start in the work in a practical way. He said it is no wonder that the physician loses so much from the noncollection of fees. Everywhere you hear that the doctor is a good practitioner but a poor collector. He insisted that the doctors owe it to themselves and their families to let the patients know that they give honest services and expect to be paid for them. A number of the physicians spoke on the methods of rendering bills and collecting. Altogether this was a very interesting meeting.

C. M. Rickert, Reporter.

ELK—April.

The April meeting of the Elk County Medical Society was held in the Knights of Columbus Hall, St. Marys, April 13, with

President James G. Flynn presiding. Members present were Drs. Bavier, Davis, Flynn, Heilman, Humphreys, McAllister, Mullhaupt, Neff, Palmer, Russ, Scott, S. S. and H. H. Smith, and Wilson.

The subject of tuberculosis was taken up for discussion and Dr. Russ gave an interesting account of his personal fight with the affection and the means used to conquer the dread disease. He went to the western coast of Old Mexico and on the coast of southern California and came home well, but it takes time and money and without both the outlook is much less bright.

In the discussion that followed, the local physicians deplored the fatality of the disease in this locality and the fact that the poor are not helped back to life and health either by private charity or state help. In fact the poor consumptive seems to be well-nigh doomed. There is a great field along this line for philanthropy.

The most of the time of the meeting was taken up in the discussion of business matters. J. C. McAllister, Reporter.

ERIE—April.

The regular meeting of the Erie County Medical Society was held in the assembly room of the Erie Library, April 2, at 3:30 P. M.

The censors reported favorably on the application of Dr. Jeremiah S. Irwin and he was duly admitted to membership.

Dr. Walsh, the chairman of the committee to submit resolutions on the death of Dr. James H. Delany, read a paper prepared by his committee, and it was unanimously adopted.

Dr. Joseph Walsh, of the Phipps Institute, addressed the society at its afternoon session on "Tuberculosis Work in Europe." Dr. Walsh attended the International Congress on Tuberculosis held in Paris last year and said that at that gathering no new specific or method in the treatment of tuberculosis had been revealed, and that the concensus of opinion was to the effect that sufficient rest, fresh air and good nourishment were the only elements in the treatment at present known to science.

His impressions of the sanatoriums of the various European countries were that the sanatorium has been brought to its highest standard in Germany, where splendid buildings with ample provision for maintenance offered the very best facilities for the proper treatment of the disease. England comes next to Germany in the number and magnificence of its sanatoriums, but, while the buildings have been erected at enormous expense, there is no money available for maintenance, with the result that the English sanatoriums are very much hampered in their work. In France the greatest attention is paid to prevent the spread of tuberculosis in children, under the belief that when the disease affects the adult the patient's resistance is exhausted and there is small likelihood of a cure. Consequently we find in that country a great number of sanatoriums for the treatment of children.

The merits of the elaborate private sanatoriums in Germany were discussed at length, also the methods of treatment adopted; in some, exercise is carried to excess, in others, absolute rest is enforced upon the patient.

In the United States, our buildings are of very modest type, most of the prominent resorts beginning with only a few patients, and gradually increasing to their present capacity. While there are some wards unoccupied in Europe, on account of elaborate buildings without any provisions for maintenance, we never dream of building new parts until the old parts are overcrowded.

In Germany no small proportion of the money has been contributed by insurance companies; surplus earnings in the treasury of these companies being used for these magnificent structures.

Dr. Walsh found that good nourishment was insisted upon; there was no choice as to altitude or climate, some of the more recent ones being erected on the sea-coast; in some tuberculin was used freely, in others not at all; the germicide for sputum cups was lysol. Bichlorid of mercury and carbolic acid, which were used in only a few places, were condemned on account of the coagulation of albumin. He recommended caustic potash as the best germicide.

Hospitals for advanced cases were provided for and were of great advantage in removing the most contagious cases from the family circle. London has for many years had these hospitals, and in that city the death rate from tuberculosis is very low. These hospitals also offer advantages for autopsy work and for systematic instruction of the physicians in charge thereof.

Dr. Walsh described the most recent addition to the antituberculosis crusade, the tuberculosis dispensary, and described the careful manner in which cases are examined, families taught how to live, mothers advised as to the raising of their children, and inspections made by nurses connected with these dispensaries to the homes of the patients. If other cases are found the patients are urged to come to the dispensary for examination and to receive proper instruction as to avoidance of the disease. If the houses are unsuitable, others of a more suitable character are found, and if the family can not afford to pay for the difference in the cost, the dispensary pays the difference between the old and new lodgings. If necessary, proper nourishment is supplied the family by the dispensary. The patient, if advanced, is encouraged to go to a hospital for advanced cases, or for incurable cases if necessary, and the nurse continues her visits at stated periods to see that the instructions are properly carried out.

Dr. Walsh summed up his impressions of the Tuberculosis Congress and his investigations of the tuberculosis work in Europe, as follows:—

1. Although the sanatoriums in the United States are probably accomplishing better results in individual cases, we have not a sufficient number of sanatoriums. Germany, with only two thirds our population, not one tenth our area, and not one twentieth our wealth, has more sanatoriums and is expending three times the amount of money on them.

2. We are not using all the means that might be employed to build and maintain sanatoriums. Insurance companies, beneficial societies, and more individuals should be enlisted in the work.

3. We are lacking hospitals for advanced cases, and until we get them wards in general hospitals should be set aside for the care of tuberculosis. Such wards in addition to caring for the consumptives will help in the education of the general physician, the residents, the nurses and the patients.

4. The tuberculosis dispensary, as managed in France or in Germany, is the most important element in the crusade against tuberculosis and we are wofully lacking in them. A city the size of Philadelphia should have at least a half dozen, and it has two; Erie should have one, and it has none.

Erie needs a hospital, or a ward in a hospital taking advanced cases. It needs a tuberculosis dispensary, a dispensary that shall not only treat cases, but follow these cases into the home and prevent them infecting other people, thereby controlling the tuberculosis situation.

These two things might be controlled by the city (as in New York City), by the county, by a combination of beneficial societies, by the benefaction of the well to do or by voluntary contribution.

Dr. D. H. Strickland said he felt very grateful to Dr. Walsh for the very instructive paper, which gave his views and the methods of treatment as carried out in European countries, as well as the management of institutions and treatment of cases in the United States. He was sorry that we are so much in the background in the care of tuberculosis. He thought that we are quite negligent in reporting this class of cases. This is one of the most important points in the management of the disease and if cases are known and not reported there is no possibility of finally eradicating the disease. Cases should be reported not for the purpose of quarantining but to let it be known that such disease exists, that it is contagious and that those who can, should shun such exposure by being forewarned. This would be a great step in the direction of preventing others from contracting the disease. To carry out the suggestions that Dr. Walsh has made will require a very energetic financial committee; to get the people interested so that they will contribute money and do it freely will require a great deal of hard work. While it is possible to get physicians to do the work free, the nurses would have to be paid for their services; unless the public contributes freely to the support of the project, our efforts must fail.

Dr. George B. Kalb said that while he agreed with Dr. Strickland as to the necessity of arousing the laity to assist in this work, it is the physician who must give freely of his time and efforts for the success of the work. The ninety physicians in this community, by their interest, could act as a leaven and in time could accomplish a great deal.

He thinks that if the local physicians would make use of the district or visiting nurse more than they do at present, she could be made a valuable assistant in the work. Many times during the past few months the nurse has had nothing to do to occupy her time: she has not averaged two calls to each physician, while there are many men who could keep her busy all the time. Many of the physicians are opposed to free dispensaries in general, but a tuberculosis dispensary would be an excellent thing for this city, because those who are able to pay will go to the physician's office and those who can not afford the services of a physician, wait until it is too late; patients who had never consulted a physician before have come under my observation with cavities in both lungs; with a free dispensary these cases would be seen earlier.

Dr. Kalb said that in a paper read two years ago he brought out the fact that there are 150,000 deaths annually from tuberculosis, while there are not 8,000 beds provided for tuberculous patients in the United States. In our city there is not one bed provided for these patients, because the general hospital beds are needed for acute and emergency work.

Dr. Heard said that he has found patients who have been the rounds of several physicians, having been told they had a cold. If such patients are told that they have tuberculosis, that is the last you will see of them; they will go from one to the other until they find some one who will tell them that they have not tuberculosis and usually will stick to him. The average country practitioner lacks facilities for diagnosing tuberculosis, and in many cases his ability to make an exact examination of the chest is very meager. In these respects the younger men are better equipped for work of this kind. Sanatoriums in this locality can be established, and should be done.

Dr. George A. Reed has thought of the possibility of one or both hospitals establishing an outdoor camp for tuberculous patients, and sees no reason why these cases could not be taken care of fully as well near home as elsewhere; it would be a distinct advantage to have these individuals near their homes, under our own observation, and the number that could be treated would be greatly increased.

Dr. F. A. Walsh said there had been quite a number of patients, in advanced stages of the disease, treated at St. Vincent's Hospital during the past five years. They were isolated in small rooms and in this way it has been of distinct good to the families. One of Dr. Reed's patients having knee joint involvement made excellent progress by daily exposure in the sun parlor.

Dr. Joseph Walsh said he agreed perfectly with Dr. Strickland that anything organized in the community is going to require funds, and it will require a certain amount of energy to collect these funds. He mentioned as a matter of fact that about a year ago he read a paper at Wilkes-Barre, advocating the establishment of a tuberculosis dispensary. One month later the dispensary was opened. He believed that you can get more money on a small fact than on a large theory, *i. e.* that if you go to a man and tell him you have a tuberculosis dispensary, he will be ready to contribute, but if you go to the same individual and tell him that you are going to found a dispensary it will take more argument and you may not get his money. At Wilkes-Barre they formed an antituberculosis society, brought into it certain prominent laymen, one of whom was made president, and one of the doctors was made secretary. They included the surrounding towns in Luzerne County, elected one of the most prominent men in each of the smaller towns to the directorate, and with this organization they have been able to run the tuberculosis dispensary very successfully. There is every prospect that they will succeed in securing state aid.

As to the question of paying nurses for this work, it is not to be expected that they shall serve without pay; the physician only gives part of his time, while the nurse gives practically all of her time. In Europe, one of the most successful ways has been in connection with the visiting nurse society, and this has also been very successful in Chicago, where the name, "Chicago Tuberculosis Dispensary of the Visiting Nurse Society," has been adopted.

Dr. Ray, the chairman, personally thanked Dr. Walsh for his very able paper, and upon motion of Dr. Kalb, seconded by Dr. F. A. Walsh, the society extended a unanimous vote of thanks to Dr, Walsh and he was elected an honorary member of the Erie County Medical Society.

Upon motion of Dr. Schlindwein, seconded by Dr. Kalb, and amended by Dr. D. H. Strickland, the chairman was instructed to appoint a committee representing the Hamot dispensary and St. Vincent's Hospital, to arrange for the opening of a tuberculosis dispensary and to report at the next regular meeting of the society. The chairman appointed Dr. G. A. Reed of St. Vincent's Hospital and Dr. F. E. Ross of Hamot Hospital.

G. William Schlindwein, Reporter.

FRANKLIN—April.

The regular quarterly meeting of the Medical Society of Franklin County was called to order by the president, Dr. J. W. Croft, at 1:30 p. m. in the Medical Library Room, Waynesboro, April 16.

Members present were Drs. Amberson, Asper, Bonebrake, Brosius, Coffman, Croft, Devilbiss, Emmert, Gelwix, Hoover, Kauffman, Kempter, McLaughlin, McLanahan, Miller, Myers, C. F. Palmer, Seibert, W. F. Skinner, J. L. Snively, Weagly, and as guests, Drs. Royer of Philadelphia, Thrush of Greenvillage, and Laughlin.

The minutes of the January meeting were read and upon motion adopted. The secretary spoke of lodge and contract practice and asked for information regarding such practice in Franklin County.

Applications for membership were received from Drs. A. W. Thrush of Greenvillage and W. E. Holland of Fayetteville. These were referred to the censors.

Upon motion the president appointed as a committee Drs. Johnston McLanahan, W. H. Brosius and H. C. Devilbiss to prepare and present memorial resolutions on the death of Dr. Louis Fred Suesserott.

Dr. Johnston McLanahan, the chairman, made some historic and eulogistic remarks on the life of Dr. Louis F. Suesserott and offered memorial resolutions. These were adopted.

Dr. L. M. Kauffman, chairman of the committee on the death of Dr. William O. Lantz, offered a series of resolutions which was adopted.

Dr. Croft expressed the desire, on behalf of the members of Waynesboro, that the society hold the next quarterly meeting there. Dr. Skinner moved that the July meeting be held in Waynesboro and it was so decided.

Dr. B. Franklin Royer of the Municipal Hospital, Philadelphia, entertained the society by an interesting and instructive discussion of smallpox and other exanthematous disease, covering the diagnosis, course and treatment of the former and illustrating the address by projected lantern pictures on canvass.

Dr. Kempter spoke of the value of such an illustrated lecture and moved that a vote of thanks be extended Dr. Royer for his kindness. This was adopted.

John J. Coffman, Reporter.

HUNTINGDON—March, April, May.

The Huntingdon County Medical Society met in Huntingdon on Thursday, March 14, with President C. A. McClain in the chair. Those present were Drs. Bush, Charles and W. J. Campbell, Evans, Fleming, Frontz, Harman, McCarthy, Moore, Myers, Sears, Simpson, and Stever.

A contribution of five dollars was ordered to be sent to Dr. J. M. Anders, Philadelphia, for the Dr. N. S. Davis memorial fund.

Dr. B. P. Steele, McVeytown, resigned from the society and was granted a transfer card.

Dr. R. Myers delivered an address on "Obstetrics." He spoke of the responsibility every practitioner assumes when he attends a case of obstetrics. He believes the doctor should be engaged early in order to get the history of such diseases as may have a bearing on the pregnancy. Observations should be made as to malnutrition, breasts, retracted or fissured nipples, abdominal walls, whether they are thick, thin or flaccid. The urine should always be examined and frequently during the last few weeks. He told what the doctor should have in his obstetric bag, and urged cleanliness in every particular, especially clean hands of the doctor and nurse. He spoke of the different presentations and said the examination should be both abdominal and vaginal. He would not let any woman suffer with labor pains more than twelve hours. He only uses ergot at the termination of labor. Expulsion can be helped materially by introducing two fingers in the rectum. He says the obstetrician's work is not finished until the mother and child are both cleansed and made comfortable. The subject was discussed by Drs. Simpson and McCarthy.

Adjourned at 3 P. M.

The Huntingdon County Medical Society met in the Huntingdon Club Rooms, Huntingdon, April 11, at 10 o'clock, with President McClain in the chair and the following members present: Drs. Boggs, Bush, Fleming, Frontz, Harman, Johnston, McCarthy, Myers, Sears, Smith and Stever.

Dr. Edward W. Loudon of Alexandria, Dr. John M. Keichline of Petersburg, and Dr. William H. Boggs of Huntingdon were elected members of the society.

Dr. G. G. Harman read a paper on "Typhoid Fever." He first described the symptoms of an uncomplicated case of typhoid fever and then mentioned the different complications that may arise. He believes that many complications may be avoided by proper early treatment and recognition of the disease. As a routine treatment he uses first a course of calomel, ipecac and soda and then one drop of carbolic acid and two drops of tincture of iodin every three hours; when the temperature returns to normal he gives strychnin, quinin, hydrochloric acid and elixir of pepsin. He uses cold sponging to reduce the temperature and avoids hemorrhage by giving a few drops of turpentine three or four times a day. For delirium he uses bromids, stimulants and small doses of antimony and potassium tartras and tincture of opium. He does not believe there will be much delirium if the system is first cleared up with calomel, ipecac and soda and the emunctories are performing their functions. He advises against the use of chicken broth as a nourishment in the disease.

Dr. L. D. Smith opened the discussion which was entered into by all present.

The Huntingdon County Medical Society met in the Huntingdon Club rooms, Huntingdon, May 9. The first session was called at 11 A. M. Those present were Drs. Bush, Charles and W. J. Campbell, Fleming, Frontz, Harman, Johnston, Keichline, and Myers.

The regular routine business was transacted.

When the society adjourned at 11:30, all the physicians went to the train to meet Dr. Francis P. Ball, of Lock Haven, who was to address them at the afternoon session. The doctors and their guest took dinner at the Leister House.

The second session of the society convened at 1 o'clock. Other gentlemen at the afternoon session were President C. A. R. McClain and Drs. Moore, Stever, Wolfe, Evans, Keichline, D. P. Miller, Schum, Myers, J. C. Fleming, Boggs, Sears and Drs. F. P. Ball of Lock Haven; William H. Banks of Mifflintown; Taylor Ealy of Schellsburg; W. C. Wilson of Huntingdon, and Dr. A. S. Harshberger of Lewistown.

The principal feature of the afternoon session was the address by Dr. Ball on "Gallstones." He showed that the disease was as harmful as appendicitis and that one person in every ten was affected by it, although it seldom attacks a person under twenty-five years of age. He gave a thorough description of the proper way to diagnose a case of the disease. At the conclusion of his address, several of the physicians present discussed the subject and Dr. Ball closed the discussion by answering a number of questions that had been asked relative to the disease.

Dr. Miller, of the legislative committee, presented a resolution to the society to the effect that the Huntingdon County Medical Society use its influence against the bill that is now pending before the legislature, providing for the establishment of a state board of osteopathic examiners, and the society voted to send a copy of its resolutions to the senator and member of legislature from this senatorial and legislative district.
H. C. FRONTZ, Reporter.

INDIANA—APRIL.

The regular quarterly meeting of the Indiana County Medical Society was held in the Einstein Opera House, Blairsville, April 9, with Dr. Wellman in the chair. The roll call revealed the largest attendance in the history of the society.

During the morning session the routine business of the organization was disposed of. The application of Dr. J. S. Lambie for membership was acted upon favorably. Four applications for membership were received.

Dr. W. B. Ansley, Dr. Jason B. Carson and Dr. W. A. Simpson were unanimously elected as a standing legal committee.

A motion was made and passed in favor of the bill, now before the legislature, dealing with social diseases.

On motion the president appointed a committee of three members, whose duty it shall be to select the best paper read at each meeting of the society and forward this to the editor of the JOURNAL.

The following papers were read: "The Obstetrician; His Duties and Responsibilities," by Dr. L. S. Clagett; "The Care of the Mother Before, During, and After Labor," by Dr. J. W. Carson; "Surgical Procedure Incident to Obstetrical Work," by Dr. Wm. B. Ansley; "Some of the Common Complications of Labor and Their Treatment," by Dr. Geo. Simpson; "The Rarer Complications of Pregnancy and Labor, Their Diagnosis and Treatment," by Dr. H. Ney Prothero; "Eclampsia; Etiology, Symptomatology and Diagnosis," by Dr. W. J. Pennock; "Treatment and Prognosis (Mother and Child)," by Dr. J. B. Carson.

The papers were carefully prepared and were well received. After the reading of each paper time was given for the paper's discussion and the members availed themselves of this opportunity to discuss any mooted point.

Since the reorganization of the society there has been a large attendance at meetings and a marked enthusiasm in carrying out the plans of the organization.

W. J. PENNOCK, Reporter *pro tem.*

LAWRENCE—MARCH. APRIL.

The Lawrence County Medical Society met at the office of Dr. McLaughry with President J. R. Cooper in the chair. The following members were present: Drs. Cooper, Jack, Linville, McDowell, McKee, McLaughry, Sankey, Tobey, W. G. Wilson, and Zerner.

The minutes of the previous meeting were adopted as read. The name of C. W Davis of New Castle was proposed.

A full report of the banquet was read by the committee and, on motion, the report was accepted.

Dr. McLaughry presented a paper on "Management of Malpositions of the Uterus," in which retroversion, anteflexion, and prolapse were discussed, giving the probable cause in each and the care that should be used as a preventive to these conditions. She spoke of the care that should be taken after confinement for at least six weeks and the necessity of repairing any laceration of cervix and pelvic floor; also of the use of pessaries and their benefit in many cases and the necessity of removing them at least every two months to prevent ulceration of the vaginal walls. In extreme cases, those that can not be relieved in this way, some of the different surgical measures that are practiced by the leading men, are necessary.

The reading of the paper was followed by a free discussion by all present.

At the April meeting of the Lawrence County Medical Society which met with Dr. Kissinger, the following members were present: Drs. Campbell, J. R. Cooper, Evans, Foster, Harris, Knoll, Linville, Miles, Popp, Sankey, Tucker, W. G. Wilson, Williams, Womer and Zerner.

After a report of the censors on the applications of Drs. Mitchell and C. W. Davis, both physicians were elected to membership. The name of Dr. James Blackwood was presented for consideration.

A communication from Dr. Griffin, which referred to the illegal practice of Dr. Barns of this city, was read. It was moved, seconded and carried that the censors interview him.

After a lengthy discussion on the way the different members of the society have been approached by a newspaper man, and his attempt to get their names and money to have their lithographs appear in the Daily News and to advertise some hobby they might have, it was unanimously decided that such a procedure on the part of physicians would not be ethical.

Dr. Montgomery Linville read an interesting paper on "Carcinoma of the Uterus." In his discussion he spoke of heredity not being so important as it was once thought to be, and mentioned trauma as being an important cause. He spoke of pain as of little use as a symptom of this condition but of leukorrhea and hemorrhage as the more important symptoms. Dr. Linville advises young physicians to be on the alert in a case of hemorrhage, especially if the patient is near forty years of age. The paper was followed by a discussion by all the members present.

BRANT E. SANKEY, Reporter.

LEBANON—MARCH.

The Lebanon County Medical Society held its monthly meeting in the parlors of the Eagle Hotel at Lebanon, March 11, at 2:30 P. M. Those present were Drs. Beekley, Grumbine, Guilford, Heilman, J. J. and Seth Light, H. H. and W. R. Roedel and Weiss. Dr. Guilford presided and in the absence of Secretary Strickler, Dr. Weiss was chosen secretary for the day.

Dr. Beckley furnished an interesting clinic, bringing before the meeting a case of conservative surgery and a case of skin disease. The former was a crushed thumb which though partly gone is healing by granulation and will leave the patient a useful member. The latter case was one of nonparasitic sycosis of the face. The patient was a laborer from Hungary, aged forty-one, with the left side of his face inflamed and partly covered with pimples and light crusts. There is considerable itching and smarting. The seat of the disease is the hair follicle. The hair when pulled out shows a whitish bulb at the root. It is a peri-follicular inflammation. The pimples come in successive crops. It is distinct from the parasitic form as it shown by the microscope. Etiology: poor nourishment, debility and exposure to fatigue and the extremes of temperature. Treatment: good diet, tonics, arsenic. Locally, the doctor dusts the face with calomel. He has used an ointment of petrolatum, calomel, glycerin and carbolic acid.

After all the members took part in the discussion, a vote of thanks was given Dr. Beekley.

A draft of a new constitution, to conform with the laws of the state society, was read by Dr. Heilman. After a protracted debate and certain changes in the text, the instrument was adopted as the fundamental law of the society. A committee was ordered to have not less than three hundred copies printed.

E. GRUMBINE, Reporter.

LEHIGH—APRIL.

The regular monthly meeting of the Lehigh County Medical Society was held in the Administration Building, Tuesday, April 9, with the following members present: Drs. M. J. Backenstoe, Bean, Bleiler, Boyer, Butz, Dickenshied, W. B. Erdman, Eschbach, Guth, W. H. Hartzell, Hausman, Henry, Herbst, Kline, McAvoy, Martin, W. A. Riegel, Ritter, and F. C. Seiberling.

The censors reported favorably on the application of Dr. O. Henritzy, of Slatington, and he was elected a member.

Dr. W. W. Hartzell, chairman of committee to consider the bills on antivaccination, reported that a large petition had been forwarded to the legislature, together with resolutions expressing our feeling in favor of vaccination.

Dr. W. D. Kline, of the committee on legislation, reported that the decision of the lower court, in reference to the case of Dr. Clymer having practiced medicine illegally, has been sustained by the superior and supreme courts, and that now it was in order for the district attorney to move the court that sentence be imposed.

The auditing committee reported the treasurer's account correct and a good balance remaining on hand.

The regular program for the day was opened with a paper on "Rheumatism" by Dr. J. F. McAvoy. After a general description, he gave the etiology of rheumatism, and then paid particular attention to differential and mistaken diagnoses, citing as an example a case of torticollis which was afterwards found to be a skin irritation produced by pediculus capitis. Sciatica is often called rheumatism, when it is really a neuritis. He referred to the auto-intoxication theory and rheumatism, as an infectious disease, always accompanied by high temperature and extreme acidity of all secretions. Forty-five per cent. of all cases of acute inflammatory rheumatism affect the heart. One of the gravest sequences is arthritis deformans. In describing treatment, he laid great stress upon diet, avoiding foods that cause flatulency or fermentation; and allowing no pork nor veal, strawberries nor tomatoes. Heat and electricity, with vibratory massage, are very good in subacute cases. Alkalies and alkaline waters were suggested. Salol and salicylates internally, with codein and morphin for pain and temporary relief. Bowels and kidneys to be kept open and free.

Under discussion, Dr. F. C. Seiberling took up the question of rheumatism as being an infectious disease. In treatment, he has found colchicum, in from ten to fifteen drop doses, as one of the best remedies, also nitrate and acetate of potash, with bicarbonate of potash. Of late, he gives, after cleansing out the bowels thoroughly, salicylate of soda every four hours. In this way for twenty years he has not found it necessary to prescribe morphin. However, when the pain is extreme, he gives antikamnia. He removes acidity from the urine by alkalies, and with the above treatment he has good results in nearly every case. He mentioned a case of torticollis accompanying an attack of rheumatism, which never was relieved, remaining a permanent disability.

Dr. C. S. Martin, in discussing this paper, referred to overdressing as being one of the principal causes of rheumatism, citing as an example his own case, being comparatively free from rheumatic pains since he does not overload himself with clothes; he never wears an overcoat until zero weather. Houses are overheated, change too extreme. Local applications of wintergreen and alcohol are very good for painful muscles and joints.

Dr. C. O. Henry referred to galvanic and static currents of electricity as highly beneficial in subacute pain of rheumatism, particularly the static current. He employs the positive pole of twenty milliamperes. A case was mentioned in which he had remarkable success with one application. For internal treatment, he prefers the salicylates.

Dr. Bleiler then read a very good paper on "Puerperal Septicemia," basing his material principally on cases in his own practice. He described modern antisepsis as preventing infection, yet, with all care, the condition at times will make its appearance, and his treatment of thorough cleanliness and curetage, with antiseptic douches at times, was not effective, giving him unfortunate results which led him to employ anti-streptococcus serum, using it twice in every case, at same time taking necessary antiseptic precautions, which in six cases, after the introduction of the serum, gave him quick recovery and no after results.

Under discussion of this paper, Dr. F. C. Seiberling referred to some similar, unfortunate experiences resulting from septic infection during the puerperium, mentioning particularly two cases out of eight, in which the patients died from infection after he had taken the most careful antiseptic precautions. He also stated that in an interview, Dr. Noble of Philadelphia mentioned that he had found no efficiency in the anti-streptococcus serum in cases of puerperal septicemia.

Dr. W. H. Hartzell, in discussing the paper, said that it might be important in this connection to mention the distinction between septicemia and sapremia, which was omitted by the writer. He also was sorry to report that he had some unfortunate cases of puerperal septicemia in his early practice, which could not be accounted for. He advises cleanliness immediately after confinement, which at times is neglected and which goes a great way in preventing infection. The hands of the accoucheur should be thoroughly disinfected, and sterile rubber gloves ought to be worn. Uterine clots must be expelled.

Dr. W. A. Hausman believes that streptococcus pyogenes causes puerperal sepsis. He further believes that it is the same as the streptococci of erysipelas. He suggests as very important, that no one who is attending a case of erysipelas, scarlet fever, or other contagious disease should attend a case of confinement.

Dr. J. F. McAvoy presented a very interesting case of thrombosis of the internal jugular vein, the patient appearing before the society. With specific treatment, there appeared to be an improvement.

H. H. Herbst, Reporter.

LUZERNE—April 3, 18.

At the meeting of the Luzerne County Medical Society held April 3, Dr. Tobias read a paper on "Local Sanitation." He said that it was his desire to call attention to a few of the laws and systems in operation in our city, with no intention to criticise the past or present officials in any department.

The laws governing third class cities give power to councils to create a board of health. The city of Wilkes-Barre is, with one exception, the only city in the state which has not taken advantage of this law, but instead appoints five members from each branch of councils, who constitute the sanitary committee. With this system, officers are usually chosen because of their political influence and friendship with the powers that be; and the fact that during some years the sanitary committee held only one or two meetings is evidence that it lacks knowledge of the work to be done.

Prejudice, apathy, ignorance and selfish interests bar sanitary progress and clog the wheels of legislation and administration. The time has come when our sanitary department should be one of the most vital and important parts of our municipal machinery. He reviewed the actual care our milk and water supplies at present receive, and then outlined the scientific control we should have to be of any real value.

In conclusion he said that if our city is to have the benefits of modern sanitation we must have a board of health made up of men scientifically equipped to deal with special problems, and they should have the proper authority to act. We must have a man at the head of it who is capable, energetic, fearless and aggressive, with a salary sufficient to insure independent action, and he must have an appropriation sufficient to enable him to obtain the best results, if our city is going to stand in the ranks of those that are doing their utmost to eliminate contagious and infectious diseases from their midst and otherwise provide for the health of the citizens.

At a meeting of the Luzerne County Medical Society held April 18, a large audience was present, including many of the graduate nurses of the two hospitals of the city, to hear Dr. Joseph Roby of Rochester, N. Y., speak on "Milk in Its Relation to Infant Feeding."

Dr. Roby said that two things have been kept foremost in the work at Rochester, first, the running of milk stations purely for infant feeding, and second, the cleaning up of the general milk supply. This has been accomplished to such an extent that the general milk supply of the city now shows, upon bacteriological test, never more than a count of 5,000,000 per cubic centimeter and in the winter time the average often runs as low as 80,000, while in New York the count runs from 20,000,000 up into the billions. He stated further that this count is really the only method of determining as to the purity of the milk and is the sole reliable criterion.

In telling about the various kinds of milk to be used in the feeding of infants he stated that the milk of the child's own mother is, of course, preferable to all other; that condensed milks are sometimes good, but often lead to the contraction of acute diseases, and that the main reliance must be placed upon raw cow's milk for its antiscorbutic power and its immunizing power.

He told of the lines of educational work taken up through the distribution of pamphlets, the establishment of milk stations where milk for infant feeding is sold throughout the months of July and August, and the practical demonstration to the farmers by trained men of the best methods for handling milk, or rather for not handling it—for Dr. Roby stated that the less it is handled the less liable it is to contamination, and he urged that, if possible, milk dealers first sterilize their milk cans, then milk right into them, cover them immediately and sink them in ice water and then ship them directly to market, thus eliminating all unnecessary handling.

He told of the cost of this work to the city and said that for keeping the milk stations open the cost is about $1,200 each year, the stations being kept open only two months, and that for general milk inspection the cost is about $3,200 annually, but the returns for this expenditure are relatively great, for in a comparison of the last ten years with the preceding ten years it has been found that the actual number of deaths of children under five years of age during these two months has been decreased by 1,200, while within that time the population has doubled, and for the whole year during this period the number of deaths has been decreased 2,400. The percentage of deaths of children under this age, with relation to the total number of deaths, has been decreased from 34 per cent. to 18 or 19 per cent. within the same period.

The resolution of Dr. J. T. Howell changing the constitution so as to have the meeting nights on the second and fourth Wednesday instead of the first and third was adopted. Dr. F. M. Brundage and Dr. Gilbert M. Newberger were elected to membership and the names of Dr. Milton A. Barton and Dr. Alberico Molinari were presented for membership.

James W. Geist, Reporter.

McKEAN—April.

The regular meeting of the McKean County Medical Society was held at Mt. Jewett, April 2, 1907. Medico-legal bills introduced into the legislature were discussed by Drs. Kane, Howe, McCoy, Canfield and Straight.

Dr. Martin J. Sweeney read a paper on "Psychic Remedies and the Irregulars," a copy of which was requested for publication in the Pennsylvania Medical Journal. James Johnston, Reporter.

MERCER—April.

The Mercer County Medical Society met at Hotel Arlington, Greenville, April 12, at 1 p. m., with Dr. Blair, president, in the chair. Members present were Drs. Blair, Elliott, Fisher, Harper, Gilliland, Hope, Kennedy, McCartey, J. H. Martin, McElhaney, Reed, Stoyer, Walker, and Zeigler.

Drs. H. Cyrus Harper of Jamestown, Caroline J. Gilliland of Sharon, J. P. Sprowl of Grove City, and J. H. Martin of Greenville, were elected to membership. Four names were also proposed for membership.

Dr. Thomas Elliott read a paper on "Some Surgical Points Pertaining to Abdominal Structures." He also presented some interesting cases.

Dr. McElhaney opened the discussion and all the members responded either with cases or remarks.

The next meeting will be held in the Court House at Mercer, July 12. We expect to have some visiting physician present. Lunch will be served at noon.

C. I. Walker, Reporter.

MIFFLIN—April, May.

The meeting of the Mifflin County Medical Society was held at the Coleman Hotel, Lewistown.

Dr. C. M. Johnson read a paper on "Pernicious Anemia" which was discussed by several of the doctors present. The opinion prevailed that the disease offers a good field for research, in the hopes that the etiology of the malady may yet be better understood. It is not reasonable to suppose that any pathological condition can have existence without there being an adequate cause. As marasmus was once thought to be a distinct disease and is now generally regarded as only a condition symptomatic of some well understood affection, such as phthisis pulmonalis, chronic enterocolitis, scrofulosis (general), infantile gastric catarrh, so it is hoped that the pathologist may ultimately prove that pernicious anemia is only a condition symptomatic of some ailment that will yield to proper treatment.

Some points concerning the initial management of our new hospital which is rapidly materilizing, were given proper consideration. The secretary called attention to the fact that our organization now numbers twenty-seven, nearly every regular physician in the county being a member.

A good dinner followed, and the society adjourned.

The Mifflin County Medical Society met on the evening of May 2, at the home of Dr. Walter H. Parcels, with ten members present.

Owing to the absence of Dr. S. H. Rothrock, his paper on "Spastic Spinal Paralysis" was not read, but the subject was discussed by several members present. Dr. Harshberger, whose experience with this malady was greatest of those present, made it clear that the disease is generally traumatic in origin, and that practically no treatment is of any avail except continued rest in bed, aided by mechanical appliances, such as fastening the upper portion of the body to the head of the bed and using weights and pulley attached to the feet, to keep the spinal column extended as much as possible. One or two others spoke of apparent good having followed counter-irritation over the spine.

Dr. Wilson reported two cases of malignant typhoid fever; one, a man thirty-five years of age, had reached the stage of convalescence when he was attacked with pleuropneumonia. Effectual fly blistering had relieved this somewhat and ultimate recovery under the ordinary treatment for pleuropneumonia was highly probable. The other, a girl aged fourteen, had, in spite of all medical efforts, declined rapidly until, the tenth or eleventh day after the fever began, she was *in articulo mortis.* (She died the next morning.) He had made heroic efforts to keep up heart action in both cases, using strychnin, digitalis, Dr. DaCosta's heart tablets, and whisky in full doses. For two weeks the writer saw these two patients with Dr. Wilson once a day.

Dr. Stambaugh reported a case of trephining the parietal bone and elevating a large portion of the skull, the patient taking no ether, and declaring that the sewing up of the scalp wound was more painful than this had been.

Dr. Parcels reported a case of abscess of the spleen which he had opened and tubed eleven days before, and promised full details of the case on the next meeting of the society. Recovery seemed probable.

WALTER H. PARCELS, Reporter.

MONTGOMERY—MARCH, APRIL.

The regular meeting of the Montgomery County Medical Society was held at Charity Hospital, Norristown, March 27, 1907.

Dr. C. Z. Weber read a paper on the subject "Anesthetics in Obstetrics." The paper was freely discussed by Drs. Weaver, Bronson, Hunsberger, Whitcomb, Heffner, McKenzie, Eisenberg, and Highley.

The president, Dr. O. C. Heffner, reported his visit to Harrisburg which he made in the interest of the Bowman Bill. All the members were strongly urged to write to their representative, asking his support of the bill.

A long discussion followed concerning contract work. The Montgomery County Society has adopted by-laws forbidding its members doing this kind of work. It was urged that this be enforced.

One new member, Dr. H. A. Spencer, was added to the society.

The regular meeting of the Montgomery County Medical Society was held at Charity Hospital, Norristown, April 24, with the following members present: Drs. Anders, Dill, P. Y. and J. L. Eisenberg, Heffner, Highley, Hunsberger, Johnson, Krieble, McKenzie, Miller, J. O. and R. Knipe, Rahn, Thomas, Weaver, Whitcomb, and Wiley.

Dr. P. Y. Eisenberg was instructed to represent the society in opposition to the Wickersham Bill before the governor in Harrisburg.

The secretary presented a list of names of nonmembers in the county and the president urged the members to bring these men into the society.

Dr. James M. Anders of Philadelphia presented a paper on "Pleurisy" and a vote of thanks was tendered him.

The applications of Drs. Charles Wylie of Pottstown, W. W. Richardson and G. M. Settle of Norristown were referred to the censors.

EDGAR STANLEY BUYERS, Reporter.

NORTHUMBERLAND—MAY.

The regular meeting of the Northumberland County Medical Society was held in Court Room No. 2, Sunbury, May 3. Members present were Drs. Becker, Campbell, Gass, Graham, Renn, Schoffstall, Swenk, and Wenck. Visitors present were Drs. Shindel, Richstine, Evans, Poffenberger of Sunbury; Drs. Emerick, Davis, Dougal of Milton; Dr. Bitler of Pottsgrove; Dr. Newbaker of Danville; Dr. Montelius of Mt. Carmel; Dr. Keller of Seven Points.

On motion it was resolved to hold the July meeting at Island Park, and, instead of the regular program, that it be a picnic. Drs. Swenk, Becker and Gass were appointed a committee on arrangements.

Prof. H. Augustus Wilson, M. D., Philadelphia, then addressed the society on "The Treatment of Intracapsular Fracture of the Femur" (illustrated by twenty-three skiagrams). Impaction of an intracapsular fracture is always favorable. The close contact and the chance for nothing but callus to come between the fractured parts result mostly in a bony union. Dr. Wilson reported Dr. Gillett's case in which he held the bone by means of an ivory peg for three years. The patient having died from another cause, postmortem showed that the ivory had loosened and there had been no bony union. Dr. Wilson also exhibited a skiagraph where he held an intracapsular fracture by means of a silver nail driven directly through the fractured parts. Skiagraph two years after the operation showed perfect bony union and motion except "the shoe and stocking position." He said no case of intracapsular fracture should be kept in the recumbent position for more than a week. This should be followed by an ambulatory splint or plaster of Paris bandage to fix the fracture.

General discussion was heartily participated in by many present, and a vote of thanks was tendered the doctor for his excellent address. H. W. GASS, Reporter.

SOMERSET—APRIL.

The Somerset County Medical Society met in Meyersdale, April 16. There was a good attendance with the president, Dr. Large, in the chair. After approving the record, routine business was disposed of.

Dr. George A. Noon of Listie was elected to membership.

The committee on fees for life insurance examinations reported as follows: We realize the importance of careful and truthful examinations for life insurance, as upon such examination largely depends the welfare of both the company and the assured. We believe the curtailment of expenses by the company should not begin at this vital point. We believe that the minimum fee for such examination should be not less than five dollars, that no competent physician can afford to make them for less and that no responsible company should ask them for less than five dollars. We therefore recommend that the minimum fee for such examinations be not less than five dollars as formerly adopted by this society. We recommend that this fee be paid by the company, and no part of it by the solicitor or agent. We condemn contract or lump sum examinations for less than five dollars each, except for examination for strictly beneficial fraternal societies where no urinary analysis is required, in which case the fee may be that which is adopted by said society if not less than two dollars and fifty cents.

Respectfully submitted,
H. C. McKinley,
W. T. Rowe,
Bruce Lichty, Committee.

The above suggestions and recommendations were unanimously approved and adopted by the Somerset County Medical Society at a regular meeting held April 16, 1907, due notice having been given that action would be taken thereon, and are therefore binding on all members of the society. To take effect on July 1, 1907.

C. P. Large, President.
H. C. McKinley, Secretary.

Dr. H. C. Hoffman read a paper on "Cholelithiasis." After quoting authors and text-books, he said, in part, that of late years the surgeon has invaded this field and has doubtless saved the lives of many. But the physician still occupies the field and, from an early diagnosis of the case, he is able to give temporary, and in some cases permanent, relief thus postponing or rendering unnecessary surgical interference with the accompanying risks. To do this the physician must early recognize the condition, remembering that its etiology is allied to diabetes, gout, obesity and the like. He says the largest per cent. of these cases are in obese individuals, and that these have been suffering with rheumatism. We will do well to investigate the known or given causes of gallstone and let our treatment be accordingly, remembering, however, whatever else you do, that the excretory organs should be active. Carlsbad and Vichy and other waters are useful. The salts of sodium, succinate, phosphate or sulphate are effective remedies. He mentioned a case in which he gave succinate of sodium three times a day for three years. There has been no recurrence of attack, and he thinks that in this remedy we have the best that can be had."

The paper was generally discussed; most of the members had had cases more or less severe. Some of these cases were of long standing and were turned over to the surgeon. It was said that the removal of the stone is only a relief, and that others are likely to form, unless medical treatment is given following the operation, which, therefore, leaves cholelithiasis to the greatest extent in the hands of the physician.

The matter of holding a session of the society every two months instead of every three months was discussed, and it was decided to hold a meeting on June 18 at Meyersdale, at which time we will be pleased to have any physician or surgeon meet with us.

The action of the society in regard to examination fees will be printed in card form and sent to all insurance companies and societies represented in the county and to all physicians, whether members of the society or not, with the hope that all will oppose the unjust reduction of the fee.

H. C. McKinley, Reporter.

SUSQUEHANNA—May.

The annual meeting of the Susquehanna County Medical Society was held at the Tarbell House, in Montrose, on Tuesday, May 7. Dr. Clayton Washburn called the meeting to order at 11:30 o'clock, and Rev. H. B. Benedict offered prayer. There were present Drs. A. J. Ainey, Beaumont, Birdsall, Fitch, Fry, Gardner, Grander, Halsey, Johnston, Lathrop, Peck, Richardson, Snyder, Taylor, Washburn, Wilson; also Dr. F. S. Birchard of Montrose, and J. D. Kelly, D. D. S., of Susquehanna.

The forenoon was taken up with routine business and reports of committees.

The venerable Dr. W. L. Richardson, who will be 92 years of age on June 7, entered the room and all present arose in his honor.

Dr. F. S. Birchard was received as a member by card from the Lackawanna County Medical Society.

By an almost unanimous vote the society resolved to recognize but one fee for examinations for old line insurance companies.

At one o'clock the society partook of an excellent dinner.

At the afternoon session Dr. Birdsall gave an interesting report of the censorial meeting at Scranton.

Dr. J. G. Wilson gave experiments in examination of urine with instructive explanations.

Dr. H. M. Fry read a brief and practical paper on the nature and treatment of pneumonia. Most of those present participated in the discussion.

Dr. Kelly read an able paper on "Mouth Breathing" which was heartily applauded and discussed.

Dr. D. J. Peck spoke at length on "Is the Present Condition of the Practice of Medicine Satisfactory?" He was greeted with applause. Several members spoke on this theme, and Rev. Mr. Benedict expressed his appreciation of the medical fraternity and his pleasure in being the guest of the society.

Dr. Washburn, the retiring president, delivered a timely address on "The Law and the Physician."

The following officers were elected: President, W. B. Beaumont; vice-president, H. M. Fry; secretary, E. R. Gardner; treasurer, J. G. Wilson; censors, Drs. Wilson, Schoonmaker and Peck; delegate to state society, J. G. Wilson; alternates, Drs. Grander and Fitch; delegate to censorial meeting, Dr. Birdsall.

The place and time of the next meeting was left to the executive committee.

A vote of thanks was extended to Rev. Mr. Benedict and to all who read papers; thus ended one of the successful annual meetings of the Susquehanna County Medical Society which has existed for seventy years. Calvin C. Halsey, Reporter.

YORK—April, May.

The regular meeting of the York County Medical Society was held in the parlors of the Colonial Hotel, York, on Thursday, April 4, at 1 P. M. Dr. I. H. Betz presided, and the following members and visitors were present: Drs. Alleman, Bacon, Barshinger, Bennett, Betz, Bittinger, Comroe, Dice, Eisenhower, Everitt, Fackler, Gable, Hildebrand, Holtzapple, Hoover, Jessop, King, Long, McKinnon, Markel, Meisenhelder, Sr., and Jr., Melsheimer, Minnich, Murphy, Park, Pfaltzgraff, Rea, Spahr, B F. Spangler, Strack, Wallace, Weil, Wentz, Zech, G. P. Yost of Glenn Rock, and guest of honor, Dr. John G. Clark of the University of Pennsylvania.

Dr. Clark was introduced to the members of the society and gave a very interesting and instructive address on "Nonoperable Conditions in Gynecology." He illustrated the different paths usually taken by the various pathogenic bacteria that ordinarily infect the uterus, adnexa and pelvic cellular tissue. He also gave a description of the pathological changes, and the usual difference between those produced by the pus cocci and the gonococcus, and emphasized the fact that the former organisms are comparatively short-lived, and the life of the latter is almost interminable, which adds force to the dictum "once infected with the gonococcus always infected." He showed the impropriety and danger of promiscuous curetage in an infected endometrium. He pointed out very plainly when to operate and when not to operate in pyosalpynx and pelvic abscess so as to assist and not to interfere with the protective forces and processes of nature. The Doctor said the intelligent treatment of abnormal pelvic conditions will require a careful study of the nature of the pathological processes as affected by the anatomical relations and physiological changes which vary greatly at different periods of life. He incidently pointed out that this embraced a principle too much overlooked by many practitioners, that the treatment of all pathological conditions should always take into consideration the associated anatomical changes and physiological disturbances; and that the study of physiology and anatomy are not only for the student at college to be forgotten afterward but that a knowledge of these branches should always form the very basis of our practical work at the bedside.

A rising vote of thanks was tendered the Doctor for his address, so replete with valuable, up to date, medical doctrine.

Strong resolutions were presented in support of the work of the Municipal League of York and unanimously adopted.

Action was taken to support a bill now before the legisature to prevent transmissible disease to progeny, and the secretary was instructed to communicate the same to our representatives and senator.

The York County Medical Society met in the parlors of the Colonial Hotel, May 2, at 1 P. M. Dr. I. H. Betz presided.

Dr. J. F. Klinedinst gave an address on the treatment of the more common diseases of the eye and afterward read a paper on the treatment of the more common diseases of the ear.

He emphasized the importance of the early use of atropin in diseases and injuries that are often attended or followed by iritis. Ophthalmia neonatorum he treats with a two per cent. solution of nitrate of silver, or among the newer silver salts he prefers protargol. Treatment should be instituted early and carried out faithfully. Possibly the most common ear trouble is ceruminous obstruction for which the main remedy is the syringe and warm water. If softening measures are necessary he recommends a few drops of peroxid of hydrogen or a warn solution of bicarbonate of sodium. Instruments must be used with care for fear of causing injury to the drumhead. He does not advise the use of oil in the ear; it is apt to congeal, become rancid and irritating. After cerumen is removed he advised a small plug of cotton placed in the canal to protect it for one or two days against the irritating effects of cold air and noise.

In recurrent furunculosis he advises attention to the general health and digestive functions, and strict local antisepsis.

The most effectual remedy for the removal of a foreign body consists in thoroughly syringing the auditory canal with warm water; if this fails use forceps, carefully manipulated. The most effectual remedies for killing insects or larvæ in the ear are alcohol, chloroform, or 1-2000 solution of bichlorid of mercury.

In severe acute inflammations he recommends leeches to tragus or over lower part of the mastoid process, followed by hot applications. Warm water poured into the ear with a teaspoon, a few drops of a solution of morphin, one grain per fluid ounce, or a few drops of a similar strength solution of sulphate of atropin instilled into the ear every three or four hours is very soothing; the latter needs watching for fear of toxic effects. The best and safest solution, he thinks, is one dram of carbolic acid in one ounce of glycerin, and of this a few drops are instilled into the ear every two or three hours. When the drum head is bulging, it ought to be incised.

Dr. Charles Rea spoke on the good effects of tropin and the propriety of its early use as a routine in injuries of the eye, thus guarding against the development of iritis. In the treatment of gonorrheal ophthalmia it is his impression that the use of the newer silver salts is giving way to a return to the use of nitrate of silver.

Dr. Comroe referred to the danger in the use of atropin in injuries to the eye near the edge of the cornea. He also emphasized the importance of constitutional treatment in some diseases of the eye, especially those due to faulty nutrition, rheumatism and syphilis. He would not advocate douching the ear with warm water to remove seeds for fear it would cause swelling of seed.

Dr. Long said he never failed to remove seeds from the ear by syringing it with warm water, but it must be done at once, and continued until successful. He thinks we ought to be cautious in the use of cocain in the eye inasmuch as it softens the cornea.

Dr. M. J. McKinnon has been pleased with the use of argyrol solution in the treatment of gonorrheal ophthalmia, and prefers it to nitrate of silver.

Dr. W. T. Bishop called attention to the faulty mathematics of some physicians when they write for a solution of a certain per cent.

Dr. McKinnon moved that a vote of thanks be extended to Governor Stuart for vetoing the osteopathic bill. This was carried unanimously.

G. E. HOLTZAPPLE, Reporter.

WARREN—APRIL.

The regular meeting of the Warren County Medical Society was held at the State Hospital on Tuesday, April 9. Eleven members and five guests were present.

Dr. Ball reported the works of the committee on public policy and legislation; also the special meeting at Harrisburg, called by Dr. Gable for purpose of urging the passage of the Bowman Bill.

At the invitation of the society, Dr. E.

W. Bolton of Oil City read an excellent paper on the "Treatment of Tuberculosis," in which he laid special stress on the importance of early diagnosis, separation of patient from the indulgent sympathy of relatives and friends, rest in bed when temperature is above 99 degrees and forced feeding as far as food can be properly digested.

The members and guests were invited by Dr. Guth to inspect the tuberculosis infirmary of the State Hospital which is just opened. This is one of four new buildings which have been erected during the last year and accommodates about fifty patients.

MARY C. CONANT, Reporter.

Necrology.

In Memoriam—Louis Fred Suesserott, M. D.

(The following memorial note was furnished by the Medical Society of Franklin County.)

Louis Fred Suesserott, M. D., Medical Department University of Pennsylvania, 1879; ex-president and member of the Medical Society of Franklin County; member of the Medical Society of State of Pennsylvania and of the American Medical Association; coroner of his home county for six years, died at his home in Chambersburg, March 2, 1907, from double pneumonia.

After graduating in medicine he entered into partnership with his father and thus continued until the latter's death.

In Memoriam—Amos T. Williams, M. D.

(The following resolutions were drafted by the committee appointed at the special meeting of the Elk County Medical Society, February 21, 1907.)

A good man has passed away. However much there may remain of rectitude and honor, of generous deeds and kindly sympathy in the world, a good man's passing leaves a void behind, never to be filled in the coming years.

It is with regret that we record the untimely death of our good friend and colleague, Dr. Amos T. Williams, who, though young in years, lived long enough to leave behind him the impress of a stainless life upon the hearts and affections of those whom he touched.

A loyal husband in life and memory, a faithful son and brother, a true friend, a sympathetic as well as a skillful physician, and a man in every sense of the word.

In recognition of his fellowship and services,

Resolved, That the Elk County Medical Society in the death of Dr. Amos T. Williams has lost a good comrade, a helpful friend and a conscientious fellow practitioner, and, as such, we mourn his loss.

Resolved, That we extend our sympathy to the bereaved family, trusting that the memory of his useful and honorable life may mitigate their grief and console them in their great sorrow.

J. B. BAVIER.
J. C. MCALLISTER.
W. R. PALMER.

Dr. Amos T. Williams died at Southern Pines, N. C., on February 18 from heart failure following a severe attack of malarial fever of a few days' duration. His illness was unknown to his friends here, hence his death was a shock to the entire community. He had been at Southern Pines for about two months to care for his mother who is an invalid at that place.

Dr. Williams was born in Clarion County about thirty-four years ago. His earlier education was received in the Ridgway borough schools. He later graduated from Bucknell University at Lewisburg. After a period of study of medicine with his father, Dr. W. L. Williams, he entered the Medical Department of the University of Pennsylvania from which he graduated in 1900. While attending medical school, the Spanish-American war broke out and he entered the service in the ambulance corps. During this service he contracted typhoid fever which was followed by pneumonia and phlebitis invaliding him for a year or so and from which he never fully recovered. About four years ago he married Miss Emma Morrison, who died about one and one half years ago. During the latter part of her protracted sickness, he devoted nearly his entire time to her care.

Dr. Williams was a man of absolutely clean life and integrity and had the esteem of all his acquaintances. No man in our medical society was held in higher regard and it is with the utmost sincerity that we write these words of appreciation, regretting in the extreme what to us must seem an untimely death. The society as a body went to the residence of his father and paid their respects to him and viewed the remains immediately preceding the services. The services at the cemetery were under the charge of the Masonic Order.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

VOL. X.
No. 9.

ATHENS, JUNE, 1907.

SUBSCRIPTION:
$2.00 PER YEAR.

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Second—William B. Ansley, Saltsburg.
Third—Philip R. Koons, Mechanicsburg.
Fourth—Henry M. Neale, Upper Lehigh.

SECRETARY:
Cyrus Lee Stevens, Athens.

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Theodore B. Appel, Lancaster.

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George W. Wagoner, Johnstown.

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John B. Donaldson, Canonsburg,	Term Expires 1909	Henry Beates, Jr., Philadelphia,	Term Expires 1907
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David H. Strickland, Erie,	" " 1909	Thomas M. Livingston, Columbia,	" " 1907
Geo. W. Guthrie, Wilkes-Barre,	" " 1908	Isaac C. Gable, York,	Ex-officio.
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Committee on Religious Newspaper Advertising: Albert P. Francine, Chairman, 1404 Spruce St., Phila.

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Surgery—John H. Gibbon, Chairman, 332 So. 15th St., Philadelphia. Charles P. Stahr, Sec'y, Lancaster.
Specialties—Lewis H. Taylor, 83 South Franklin St., Wilkes-Barre. Robert Milligan, Sec'y, Pittsburg.
Next Annual Session will be held in Reading, September 23-26, 1907.

Address.

CHAIRMAN'S ADDRESS.

BY SAMUEL D. RISLEY, M. D.,
Philadelphia.

(Delivered at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

I wish to express my high appreciation of the honor which has been conferred in making me chairman of this important section of our state society, *i. e.* the section on specialties. In presiding over your deliberations I trust I shall receive your assistance in conforming to the rules laid down for our guidance.

The By-Laws have fixed the time limit of papers to be presented at ten minutes while five minutes have been allowed to those appointed to open the discussion and for others who may choose to take part. It has been thought that this arrangement will allow sufficient time for the presentation of any original view or the brief statement of any important phase of the subject which might add to or complete the general consideration of the subject under discussion. I hope I shall have your assistance in obeying this rule of the society.

The state society has, I believe, taken an important step toward the fulfillment of its ideals for the advancement of scientific medicine, by providing for the classification and division of its work, in the creation of sections.

As long as all papers were read before the general society only, it was reasonable, and quite inevitable, that only such subjects as would be of general professional interest should be presented; or if special subjects were brought forward that only the less obscure phases of disease affecting special organs would be chosen for review. Not to do so was simply to drive from the room disinterested auditors, all of whom, at much personal sacrifice, had left their homes and traveled to the meeting place to compare experience and so to instruct and to be instructed. As long as the plan of the general meeting only was adhered to, it was obvious that but little could be done by the society for the advancement of scientific medicine through the presentation of new and original work. Members working in special fields or those pursuing original investigation in the laboratory or in clinical medicine would seek other avenues than our state society for the presentation of the results of their work. It should be remembered that every earnest worker brings before his colleagues the results he has reached with two motives in view, first, for the publication of what he thinks will be useful as an addition to the sum of our knowledge as physicians and surgeons; secondly, for the purpose of review by his fellows working in the same or similar lines of research. This second motive is the real purpose of discussion. If the views or results brought forward by the author of a paper are honored by the approval of his colleagues he will be gratified and encouraged by a word of commendation to go forward with renewed energy in his pursuit of knowledge. If the views presented should not prove to be in agreement with the experience of others, or fail to commend themselves to the mature judgment of his colleagues he should be equally grateful for a frank and courteous expression of other views and for a statement of the reasons for disagreement. He can then return to further investigation with renewed determination, either to confirm his conclusions or discover error. I am fond of regarding each paper presented at a meeting like this as a precious jewel which the author has, by dint of much labor and personal sacrifice, quarried from the deep but difficult mines of truth; a gem which he presents with diffidence and pride for inspection, in order that it may be subjected to the art of the lapidary for grinding, polishing and valuation.

This is a sufficient motive for our discussions. It is this which gives value to these meetings. But it can be accomplished only through the specialization of the work. Under no other conditions can we hope to draw to this society the results and conclusions based upon careful and extended original research. In this connection I would urge the members of this section to use their influence to secure a change of the rule which compels the sole publication of papers in the JOURNAL of the society, since I am sure it prevents the presentation here of fresh or original work, the publication of which may be deferred for an entire year, whereas its publication could be secured in special periodicals much earlier and without serious detriment to our JOURNAL. I suggest that this end can be attained by a qualification so that, while the rule shall stand as at present, an addition can be made so that it shall read, "Except in the case of papers presenting the results of original observation or research, in which case, with the consent of the general secretary, they may be published in special journals."

While, therefore, the opportunity afforded by the sectional work for the division of the labor and for the encouragement of scientific medicine is of great importance, I would remind you that there is another side to the question which must not be ignored. In the first place, the time devoted to the purely scientific work of the special sections should not be so great as to unduly encroach upon the social features of the annual meetings. The charm of social intercourse is by no means the least of the many advantages occurring from the gathering of the clans. The medical profession is a great fraternity, a brotherhood. We should not be niggardly of the time spent in the cultivation and enjoyment of old friendships and the formation of new ones. Any effort in this direction, if I may speak of personal experience, has always served to increase my respect and deepen my love for my professional brethren. By social contact unjust prejudices are dissipated, a better understanding prevails and friendships are formed and cemented where before indifference or possibly an illy defined antagonism had held the field. We can not therefore, however important the scientific work, afford to lose the broadening influence and charm of our social intercourse.

Nor should the work in the section be allowed to conflict with the sessions of the general meeting or the work of the House of Delegates.

If the Medical Society of the State of Pennsylvania is to reach true greatness it must not be great in spots, it must not be nodular. The marvelous advance in modern scientific medicine, it is true, has been due to the specialization of work, but it is equally true that, in an important sense, in the practical daily application of our science and art to the relief of the afflicted, specialism is a misnomer. We are physicians all! No special organ can be separated from the general organism and treated as an independent or individual entity. The endeavor to do so has too often been, and must always be, the reproach of a narrow specialism. The almost infinite breadth of modern medicine has made the devotion of one's endeavor to the treatment of special organs a necessity if the best results in the treatment of disease are to be secured, but this limitation of practical work, *e. g.*, to the eye, ear or other special organs of the body, must not be made to imply an ignorance of or indifference to general medicine and surgery or of the specific affections of other organs than the one selected for the special field of endeavor. The so-called specialist can not, therefore, afford to neglect the opportunity for advancing his knowledge of general medicine and surgery afforded by the general sessions of the society; nor, can the general, *i. e.* the family, practitioner afford to ignore the increase of knowledge to be gained by attendance upon the work of the section on specialties. To every medical man the critical moment must surely come when, if he is to do his full duty to his patient, he must be able to at least avoid error in diagnosis and treatment; the family practitioner in some special field; the specialist in the domain of general medicine and surgery.

He can do this only through a broad medical culture and though he may not feel called upon to lift the responsibility alone in cases of disease which belong outside his own selected field of labor, he will at least know when to ask for help. The ophthalmologist, for example, who does not strive earnestly to keep step with the steadily advancing column of students in all other branches of our science and art, must sooner or later be left hopelessly in the rear and classed among the stragglers, an unworthy member of the advancing army.

The family practitioner who does not study, but turns away with indifference, or, possibly with antagonism, from the vast and important work which is being done along special lines of investigation, and so remains ignorant of the important rôle played by local reflexes, etc., in causing or simulating general derangements, must also soon find himself marching with the rear guard.

I must, therefore, urge upon the members of this section an earnest and enthusiastic participation in the important and interesting program provided for the general sessions, and will cordially welcome every member of the state society to a participation in the work of the section on specialties.

Original Articles

LARYNGECTOMY FOR MALIGNANT DISEASE. REPORT OF A CASE OF LARYNGEAL ENDOTHELIOMA.

BY CHEVALIER JACKSON, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Cancer of the larynx when intrinsic should be diagnosticated so early that the comparatively slight operation of thyrotomy will suffice for its removal. Nowhere else in the body can such good results be obtained as in early intrinsic malignant disease of the larynx when dealt with by thyrotomy, by which we mean the division of the thyroid cartilage in the median line, followed in malignant cases by the removal of the growth with a wide area of healthy tissue. But, unfortunately, we rarely see it at this early stage, and it becomes a question only of whether a laryngectomy shall be done or not. This, however, is a very important question. Operation upon cancer of the larynx when the patient is almost moribund has done much to discredit laryngectomy. Shock, sepsis, and pneumonia are the three dreaded postoperative factors in mortality. To withstand these, or, better, to avoid or to minimize them, a robust general health is absolutely essential. This is the first point I wish to make.

To subject the patient to the regular postoperative surgical routine, with an intern and a nurse both untrained in tracheal work, is to court disaster. This is the second point. Next in importance is the avoidance of deep anesthesia and of morphin in the after treatment. It is quite essential to avoid the abolition of the cough reflex, which is the watch dog of the lungs. With these precautions, the use of chloroform, not ether, and only the slightest amount of that, and the placing of the patient in the Trendelenberg-Roser position; observing these things, postoperative pneumonia should be a rare complication of laryngectomy. A thorough preparation of the patient, especially the cleansing of the mouth and throat, and the closest possible approach to asepsis will reduce the septic complications to a minimum degree of severity and frequency.

In regard to shock, blocking the nerves with cocain is essential. Next in importance is the careful handling of the esophagus. As Dr. John W. Boyce demonstrated on three of my cases, a large proportion of the shock in laryngectomy as compared with thyrotomy, is due to tugging upon the esophagus in the separation of the larynx posteriorly from the anterior esophageal wall. This was reported in full by me at the last meeting of the British Medical Association.

The technic that has yielded me the most satisfactory results has been published so it is unnecessary to repeat it here. (See *British Medical Journal*, and *The Laryngoscope*, August, 1904.)

While the writer's results as to operative mortality have been remarkable (eight consecutive cases without a death within thirty days) he hopes this will not be construed as advising laryngectomy in preference to thyrotomy. On the contrary, he would take advantage of every opportunity to urge upon the family physician the necessity of examining every case of chronic hoarseness in a patient over thirty years of age, in order that an early diagnosis may permit the removal, in intrinsic cases, of the growth by thyrotomy, which leaves the patient unmutilated and with a fairly good voice. But it is urged that, the disease not having been discovered sufficiently early to render the case advisedly operable by thyrotomy, the patient should not be allowed to die when laryngectomy will give him a number of years of life. I do not say that it will cure him, for I do not believe there is such a thing as a cure of malignancy. Malignancy consists as much in a vulnerability as in the local process, and, as previously pointed out by the writer, reappearance of a malignant lesion after one year is, in reality, a reinfection and not a recurrence. If a year's freedom from disease follows operation, we may, I think, justly claim operative adequacy.

There seems to be, on the part of the profession, a horror of laryngectomy and a tendency to allow the patient to die of starvation, or in some cases, indeed, of asphyxia without even a palliative tracheotomy. This is utterly unjustifiable. These patients can be given, as shown by my statistics elsewhere published, from eight months to seven years of comfortable life. There seems to be a mistaken idea on the part of many members of the profession, that the laryngectomized patient is voiceless. Such, however, is not the case. Buccal speech was developed in all of my patients that lived over one year. Those who were users of tobacco indulged as freely as ever.

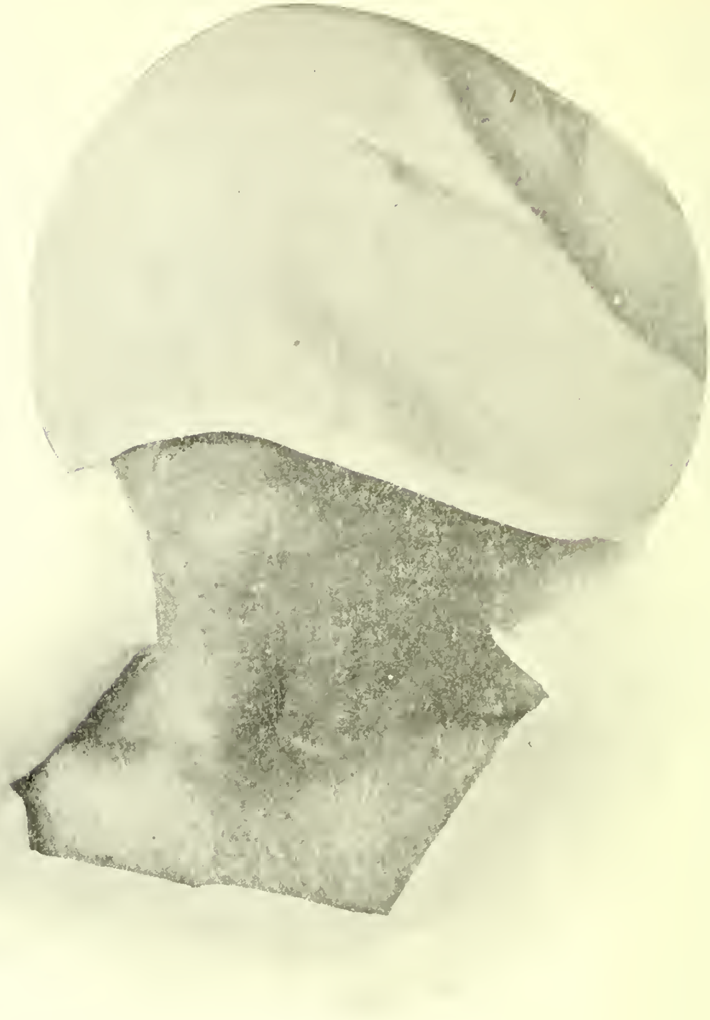
The most striking thing to me in looking over the reports of cases in the literature is that any one should operate on patients in a moribund condition.

If laryngectomy be reserved for patients in good condition, with not too extensive involvement and a careful technic before and after as well as during operation, as I have elsewhere elaborated, laryngectomy will be removed from the list of probably fatal operations. As illustrating the results of nearly perfect technic in a favorable case, the following may be cited:

A male, aged sixty-eight years, was sent to me by Dr. Jacob Wolf, who suspected malignancy because of a history of a few weeks' increasing dyspnea, preceded by three months' increasing hoarseness. The entire left side of the larynx was occupied by a mass of infiltration that pushed the mucosa ahead of it without any lobulation or ulceration, and which fixed the cord. The right cord made a very slight respiratory excursion, but dyspnea was severe. Antiluetic treatment under these circumstances was out of the question. I immediately opened the trachea under infiltration anesthesia without pain or a moment's danger.

The temperature remained normal, he gained in weight and improved in appearance, through this relief of his dyspnea, and his laryngeal condition improved slightly. Under Dr. Wolf's skillful management the therapeutic test was pushed for a month, with no improvement in the laryngeal condition. A specimen taken at the tracheotomy was reported negatively, notwithstanding which I urged laryngectomy as I deemed the specimen too superficial to enable the pathologist to give a dependable opinion. The patient then consulted Dr. Emil Mayer and Dr. Francke H. Bosworth, of New York City, who both concurred in the diagnosis of malignancy.

With the assistance of Drs. C. C. Sandels and Ellen J. Patterson, chloroform being skillfully administered by Dr. C. H. Ingram, with Dr. Wolf at the pulse and Dr. John W. Boyce at the sphygmomanometer, I removed the larynx through a median vertical incision from the hyoid bone to the tracheotomy wound. After baring the larynx and trachea, the latter was cut across below the first ring, brought forward and sutured to the skin. The larynx was then raised from below and dissected free from the esophagus and turned upward. The anterior wall of the esophagus being extensively involved on the left side, it was resected with the scissors for a distance of three centimeters on this side. The epiglottis was removed. The esophageal wall was then drawn upward and stitched to the tissues at the hyoid bone, the stitches being



Dr. Chevalier Jackson's case of endothelioma of the larynx. From photograph taken four months after operation.

carefully placed to complete a good swallowing tube. The overlying soft parts were drawn together carefully with "ten-day" catgut tension sutures, the skin being united down almost to the tracheal orifice, leaving a small opening for packing in a drainage wick.

Dr. Boyce (*British Medical Journal*) reported as follows on the sphygmomanometric readings: "The blood pressure was seen to fall steadily as long as the esophagus was being manipulated, and went almost to the danger point I had fixed upon in my mind as the one at which the operation should be stopped. This fall of pressure is so remarkable, and so out of proportion to the apparent severity of the operation, that it suggests the theory that the depressor nerve mechanism of the human heart runs in the substance of the esophagus. If so, it might account, not only for death on the table, said to occur in these operations, but also, by the profound prostration induced, for some of the inhalation pneumonias that are reported as following. Whether other observations shall confirm this theory or not, the practical effect indicates most extreme caution in making traction on the esophagus, and that incisions into it should be made with the part as nearly as possible in its natural position."

The patient took no food by mouth for

five days. I have been skeptical as to the nutrient value of food enemata. But in this case Dr. Wolf sustained the patient without material loss of weight during this period. Sterile water was given by mouth after the first day, and sterile liquid food after the fifth day. The highest postoperative temperature was 101 degrees, the pulse reaching 100.

The wound healed *per primam* with the exception of a small portion of the left side, where the esophageal resection had been extensive. Here a slight leakage of swallowed fluids persisted for a week, when it closed. The patient sat up in bed on the third day, got up on the sixth day, went into the adjoining room at the end of a week. In three weeks he went to a baseball game and in six weeks he resumed business duties. Now, at the end of four months, he is hale and hearty, enjoying the good things of life, goes everywhere, eats heartily, smokes with usual zest, and is rapidly developing a buccal voice. Dr. Jonathan Wright reported the growth to be an endothelioma.

This case is briefly outlined here to show:

1. The, in some instances, malign nature of chronic hoarseness.

2. The safety and painlessness of tracheotomy under local infiltration anesthesia.

3. The unreliability of a histologic report when based upon the inadequate specimen obtainable without thyrotomy.

4. The shock produced by needless tugging on the esophagus.

5. The prompt convalescence after laryngectomy in a case in which all conditions are favorable, to which class of cases the operation of laryngectomy should be limited.

In conclusion, if the patient with a cancer of the larynx be in bad general condition, for the sake of humanity let him die without laryngectomy. If he be in good condition, urge immediate operation, before his health shall fail. Above all, let us not forget the frequently malign nature of chronic hoarseness, that we may detect laryngeal cancer early.

DISCUSSION.

Dr. Robert Milligan, Pittsburg: I have seen Dr. Jackson's work and know the results, which have been simply marvelous in some cases. They could not have been better for this class of work.

I want to speak of two cases of esophagotomy occurring in my practice. One patient was a man of seventy-six years, who had never been ill. He was sent to me at the hospital, having swallowed practically the whole bony portion of a lamb chop. The esophagus was opened; and the bone was removed from a point two and a half inches below the clavicle, with a long, curved, laryngeal instrument.

The point that struck me most was the great shock that occurred at that time. On catching the end of the bone and moving it the slightest bit, the blood pressure was markedly decreased. I had to stop four times to resuscitate the patient. This shows the extreme shock produced by the slightest manipulation of the esophagus. Age might have had something to do with it. I had him in the Trendelenburg position, as low as possible, and was working with a reflected headlight. The operation had to be performed or the patient would have died.

There was also marked shock when I opened the esophagus. The blood pressure decreased to the danger point; but, as certain death would have resulted had the operation not been done, I continued, giving oxygen to keep up the blood pressure and relieve the shock. The man did well and finally left the hospital; but six weeks after the operation, he became intoxicated and died of pneumonia.

The second case that illustrates the point was also an esophagotomy, in this case due to a chicken bone. Both bones were very large, this one being as large as my finger. The patient was a woman sixty-five years of age, and the shock was just the same on the slightest handling of the esophagus. As soon as I had resected down to the esophagus, the handling of it caused this marked fall in blood pressure clear to the danger point. In both patients, it reached 110, and the woman looked to me as if she were dead. We gave her practically everything known to resuscitate her. She survived the operation, but died thirty-six hours afterward, never having recovered from the shock of the operation.

What struck me most forcibly was the great shock that even handling the esophagus produced. In this case, I had to push the larynx to one side as the piece of bone was pressing on it, and I was afraid of tearing the esophagus and injuring the larynx. As I pushed it aside, I also noticed the shock, as if it were pressing on the nerve in the esophagus.

In the first case, I put a tube into the stomach and kept it in thirty-six hours. The patient was fed through this tube, which was a little over a quarter of an inch in diameter, and was sewed to the lip. In removing the tube, there was exactly the same fall in blood pressure. It had been 125, but fell to 110.

Dr. William G. B. Harland, Philadelphia: What form of instrument was used in measuring the blood pressure? I should also like to know whether, in removing the larynx, Dr. Jacksen ever found the supposed malignant growth to be tuberculous or nonmalignant.

Dr. Samuel D. Risley, Philadelphia: How do you account for the tremendous shock produced by traction upon the esophagus?

Dr. G. Hudson-Maknen, Philadelphia: The work of Dr. Jackson and Dr. Milligan would seem to demonstrate that the specialist may learn to do major operations. With such results as have been reported here, it would seem that the general surgeon might well hesitate before attempting laryngectomies.

A possible explanation of the greater success of the laryngologist in these operations is the fact that he, better than the general surgeon, knows how to take care of the patients afterward.

Dr. Jackson, closing: Dr. Boyce's theory referred to the possibility of the depressor cardiac nerve running in the esophageal wall. Whether this is correct, I do not know: but I do know that the esophagus is the "touchiest" organ in the body. I have had more serious symptoms, so serious indeed that a fatal result seemed imminent, while working with the esophagus than while operating upon any other organ. The esophagus will not begin to stand the operative manipulation that the brain, for instance, will. I believe it is the Stanton instrument that Dr. Boyce uses; but with that, as with the *x*-ray work, I am incompetent to give an opinion. Dr. Boyce attended to all the sphygmomanometric work, and I know nothing about it.

I should like to thank Dr. Milligan for emphasizing the matter of esophageal shock.

In regard to postoperative care in such cases, either I am, or my assistant is within call all the time; and the patient is under the care of a nurse especially trained in laryngeal work. The nurses are as familiar with the trachea as with the mouth. These patients require the most painstaking postoperative care. I have spoken of this in my paper, but I did not wish to take up the time of the section in reading this part of it. Many of the fatalities occur through neglect of detail in the after treatment.

In reply to Dr. Harland's question, I would say that such a growth may turn out to be tuberculous, and he makes a good point. In one case, I saw tuberculosis, syphilis, and malignancy all present in the same larynx. In another instance, both tuberculosis and syphilis were present. Syphilitic trouble may be easily eliminated from the diagnosis. In regard to tuberculosis, primary tuberculosis of the larynx is so exceedingly rare that it may almost be ruled out. When a man of sixty or seventy years, with a normal lung, has a laryngeal condition that may be either syphilitic or tuberculous, one may, on the strength of his age and his perfectly normal lungs, safely rule out tuberculosis of the larynx. There are cases in which clinically one can not distinguish between tuberculosis and malignancy; but, with the aid of these corroborative facts, the diagnosis can usually be made. If suspected malignancy occurs as early as the age of thirty years, a doubt may arise; but in this circumstance, I should do a thyrotomy; and if proved tuberculous, I should also treat it surgically. Primary tuberculosis of the larynx does sometimes occur, and one should be a little guarded, but it requires surgical treatment anyway. In some of the cases enumerated in my paper, I made a failure on the clinical diagnosis. I should not do a laryngectomy in every case, on the strength of the clinical diagnosis alone; but there are cases in which one can be sure.

DEMONSTRATION.

Dr. Jackson demonstrated esophagoscopy and bronchoscopy on the living subject, referring to forty-eight cases of successful removal of foreign bodies from the bronchi, trachea, larynx, and esophagus, and also to cases of malignant and benign conditions of the esophagus diagnosticated and prognosticated by the aid of the esophagoscope. He stated that with his improved instruments, bronchoscopy is easy; while with the original tubes of Killian, great skill is required.

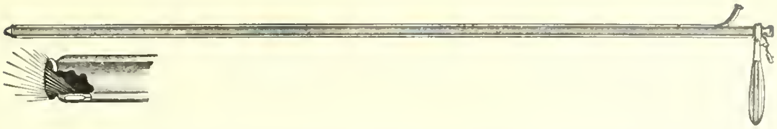


FIG. 1. Chevalier Jackson's bronchoscope, esophagoscope and gastroscope.

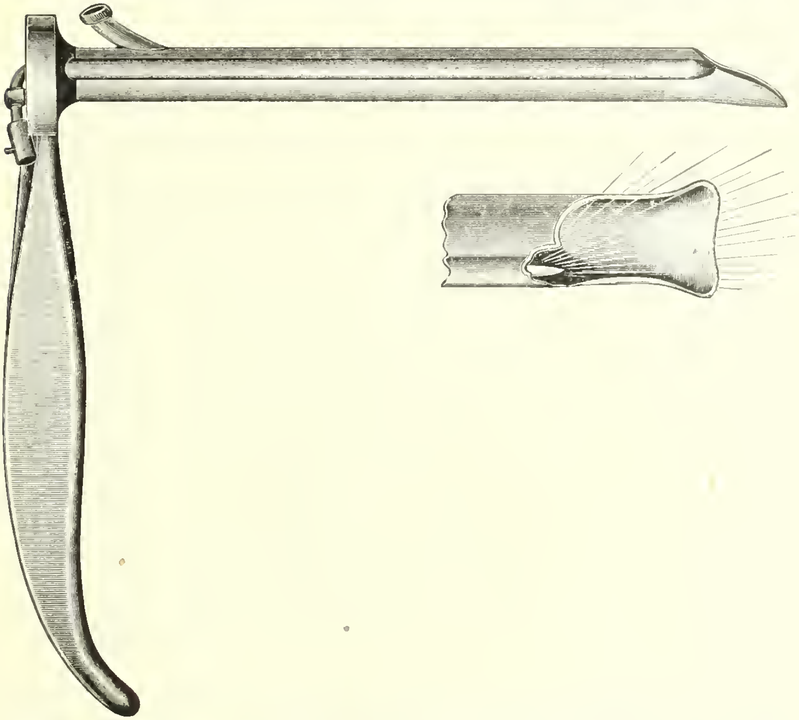


FIG. 2. Laryngeal speculum for examination and treatment of the larynx and upper end of the esophagus.

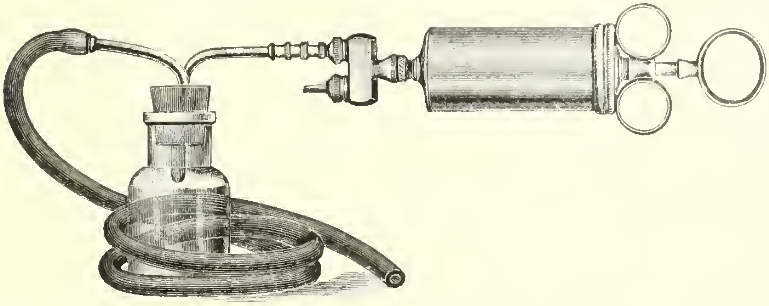


FIG. 3. Secretion aspirator for use in bronchoscopy, esophagoscopy and gastroscopy.

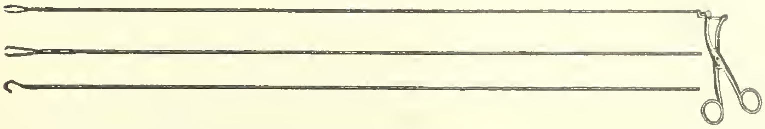


FIG. 4. Forceps, sponge holder, hook and probe, the latter being formed on reverse end of hook.

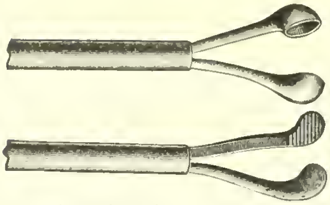


Fig. 5. Full size view of jaws of forceps.

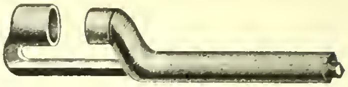


Fig. 6. Full size view of punch forceps for removal of specimens from air passages, esophagus and stomach.

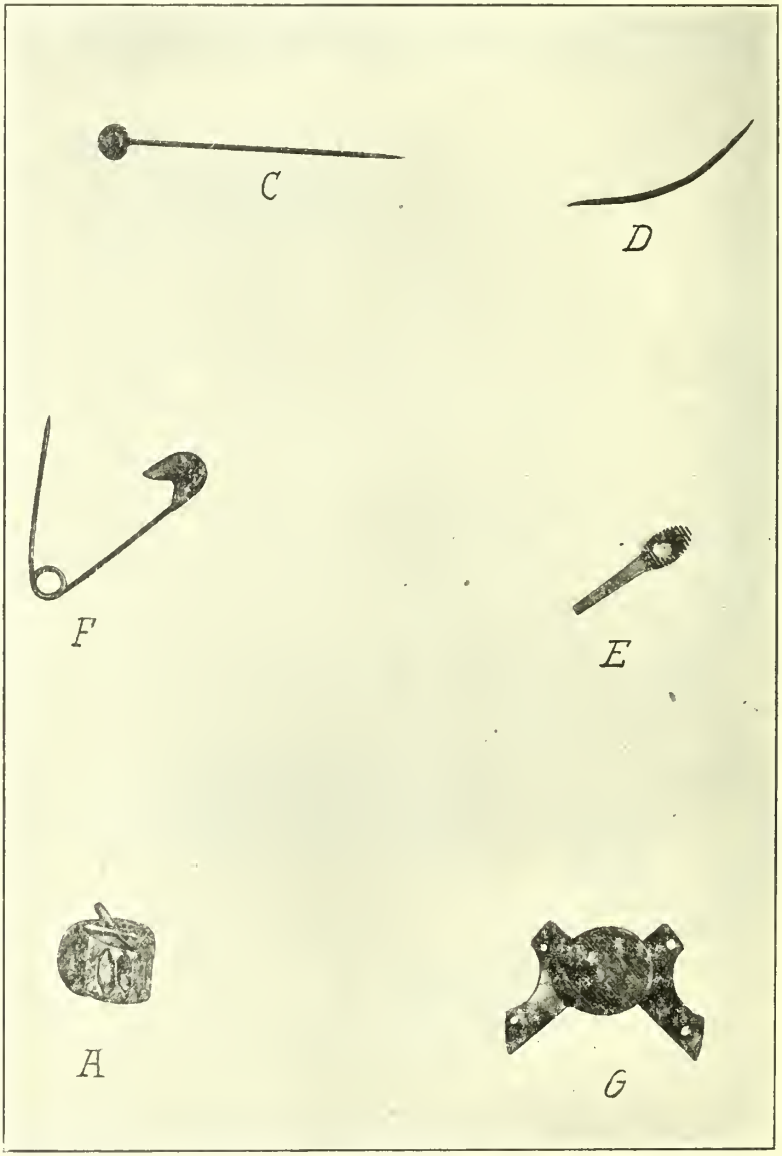


Fig. 7. Foreign bodies removed by esophagoscopy and gastroscopy.
C. Pin removed from esophagus of pregnant woman, aged 23. Cocain.
F Safety pin from esophagus of 9 months old infant. Chloroform.
E. Forceps jaw removed from the stomach of man aged 32 years. Ether.
A. Cuff button removed from esophagus of 4 months old infant. Cocain.
G. Joint of carpenter's rule removed from esophagus of boy of 7 years. Cocain.

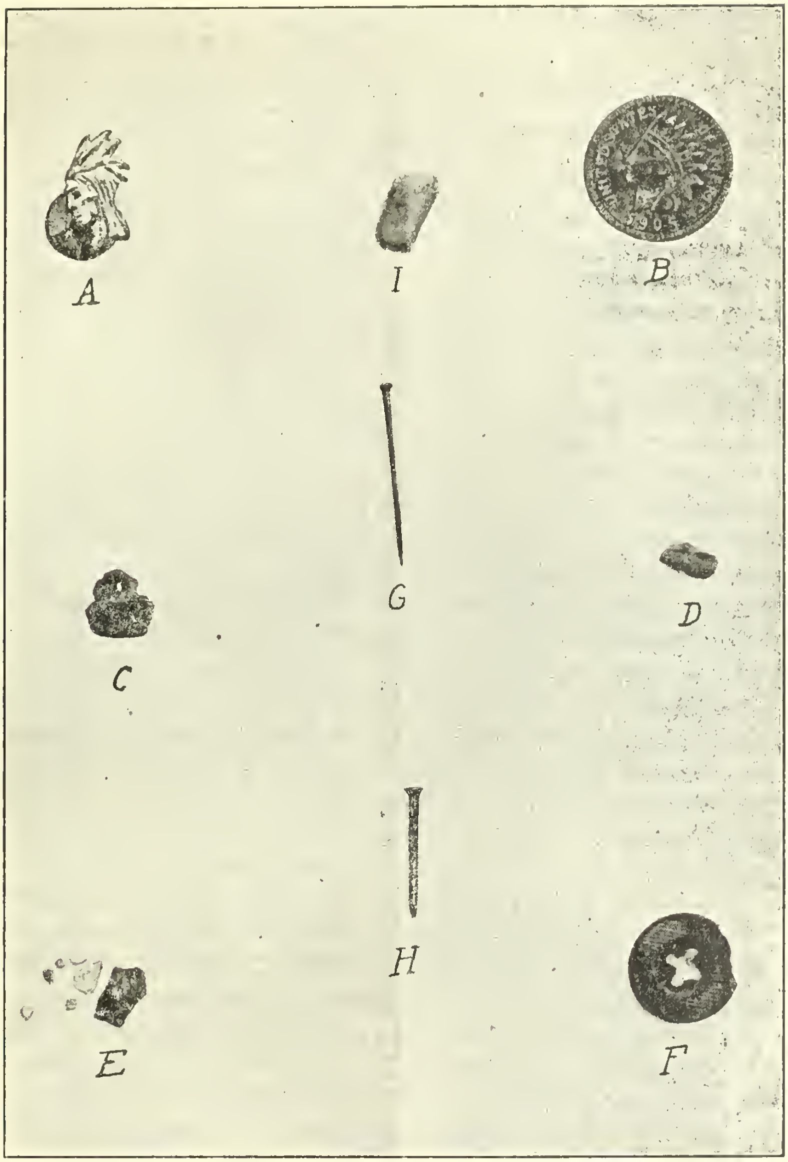


Fig. 8. Foreign bodies removed by tracheobronchoscopy.
A. Shirt button from trachea of 19 year old boy. Cocain. Upper tracheoscopy.
I. Pebble from left bronchus of man 28 years of age. Ether. Upper bronchoscopy.
B. Penny which in 2 months ulcerated through into trachea from esophagus of child 2 years old. Chloroform.
C. Shoe button in bronchus 2 years in maid of 18 years. Upper tracheoscopy.
D. Bone from bronchus in maid of 18 years. Upper bronchoscopy. Chloroform.
G. Pin from trachea of woman aged 20. Upper tracheoscopy. Chloroform.
E. Fragments of eggshell from larynx, simulating croup, antitoxin given. 9 months old infant. Direct laryngoscopy. No anesthesia.
H. From right secondary bronchus, man aged 24 years. Upper bronchoscopy. Chloroform.
F. From trachea in boy 14 years of age, Cocain.

OCULAR INFECTIONS DUE TO DISEASE OF THE CONJUNCTIVA AND THE LACRYMAL PASSAGES.

BY EDWARD ADAMS SHUMWAY, B.S., M.D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The methods of infection of the eyeball as the result of diseases of the conjunctiva and the lacrymal passages, and the plans to be adopted to prevent such infection, in the presence of an injury or an operation, are among the most important problems that the eye surgeon must consider. Not many years have elapsed since Von Graefe taught that infection after operation was due to disturbed nutrition of the cornea, and that the successful result of a cataract extraction depended upon the position of the incision and the height of the flap, but we know now that, in the majority of cases, such infection depends upon the presence of microörganisms within the conjunctival sac. The conjunctiva is contaminated within a few hours after birth, and the bacteria which are normally present are greatly increased in number by inflammations of the conjunctiva and the lacrymal passages. The specific organisms and the forms of inflammation which they produce on the lids, conjunctiva and cornea have been discussed recently in a symposium in the section on ophthalmology at the Boston meeting of the American Medical Association. With inflammations of the lids and conjunctiva we have, at present, nothing to do. Infections of the eyeball itself fall naturally into two classes; namely, those which involve the cornea in the form of ulcers, and those which involve the entire ball.

Ulcers of the cornea are produced by a great variety of organisms, but the ones most frequently found are the pneumococcus, *Staphylococcus pyogenes aureus*, *Streptococcus pyogenes*, gonococcus, and the diplobacillus of Morax-Axenfeld. Less commonly the *Bacterium coli commune*, the Koch-Weeks bacillus, Petit's *Diplobacille liquefiant*, *Bacillus pyocyaneus*, the diphtheria bacillus and various forms of aspergillus have been reported. Of these, the gonococcus, Koch-Weeks bacillus, diphtheria bacillus and Morax-Axenfeld bacillus cause ulceration only in the presence of the conjunctivitis to which they give rise, primary ulceration of the cornea, when produced by these organisms, being of extremely rare occurrence. Infection of the cornea, in the majority of cases, moreover, presupposes an injury to the corneal epithelium. The ordinary pyogenic organisms have no effect when the epithelium is intact, and the virulent pus from a purulent dacryocystitis may bathe the corneal surface for years and not cause ulceration, until a slight traumatism opens the way to the tissue beneath, when infection rapidly occurs, usually by the pneumococcus, even when staphylococci and streptococci are present at the same time. To this general statement exception must be made for the gonococcus, diphtheria bacillus and possibly the *Bacillus pyocyaneus* (according to McNab[1]). Experiments of Morax and Elmassien,[2] Coppez,[3] and others have shown that the diphtheria toxin can produce conjunctivitis and has a direct action upon the cornea itself, causing a necrosis of the surface, as is evidenced first by a whitening of the tissue and then a loss of substance. The same thing is probably true also of the gonococcus and pyocyaneus toxins. In the presence, however, of a conjunctivitis produced by one of these organisms, accidental injuries, which may be caused in making applications or by the constant rubbing of false membranes or roughened lids over the surface, open up the cornea proper and rapid ulceration follows, with secondary infection by other organisms, notably the streptococcus.

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[1] McNab: *Ophthalmic Review*, 1901, p. 345.

[2] Morax and Elmassien: *Ann. de l'Inst. Pasteur*, 1892, p. 210; *Ann. d'Oculistique*, CXXI., 1899.

[3] Coppez: *Bull. de la Soc. franc. d'Oph.*, 1897, p. 90.

Infections of the globe may result from the perforation of ulcers, or may follow penetrating injuries or operations during which the eyeball is opened. In the latter cases the infection is usually caused by the ordinary pus organisms, the pneumococcus, staphylococcus and streptococcus, although the *Bacillus subtilis,Bacillus coli communis, Bacillus perfringens* and *Aspergillus fumigatus* have been found in a few cases. The cases which I have had the opportunity to examine microscopically have been caused by the pneumococcus and the streptococcus. Weeks[4] believes that the inflammation produced by the streptococcus is more severe than that caused by the other pus organisms. Very frequently the infection comes from an overlooked dacryocystitis. It is probably not possible, according to Hauenschild's[5] experiments, for bacteria to pass upward from the nasal chambers through the lacrymal passages to the eye, but in the presence of a stricture of the duct the sac forms an excellent breeding ground for organisms, and these readily overflow upon the conjunctiva. Under such circumstances the treatment of even minor injuries, such as the abrasions produced during the removal of a foreign body from the cornea, is of considerable import.

The constant presence of various organisms gives rise to wonder that any wound of the eyeball heals without infection. It has often been suggested that the tears have a bactericidal action, and experiments by Bach,[6] Helleberg,[7] and others, would indicate that such is the case with many bacteria, unless they are present in too great numbers. Axenfeld,[8] however, thinks that a true bactericidal action has not been definitely proven, but that the effect is produced by a dilution of the bacteria, and hence a reduction in their virulence. We must conceive, moreover, that while bacteria are practically always present, in the majority of cases their pathogenicity must be too low to overcome the vitality of the cells of the organism. Otherwise no wound would heal, whereas, as a matter of. fact, even in the days preceding our knowledge of antisepsis, seventy to eighty per cent. of the major operations were successful, and Horner[9] was able by simple cleanliness to reduce his percentage of failure in cataract operations to one and six tenths.

What, then, shall we do in the presence of a wound of the cornea? Manifestly the first thing is to cleanse the surrounding parts, particularly the lid margins, flush the wound and conjunctival sac thoroughly, and remove any foreign body which may be present, including the iris, if that be prolapsed into the wound. The question whether we shall use antiseptic solutions in eye surgery has been debated long and earnestly. Following the teachings of Lister in general surgery, solutions of carbolic acid and bichlorid of mercury were used in the conjunctival sac, but it was soon found that these strong solutions were not well borne by the eye, and that opacities of the cornea often followed their use. Experimental work, moreover, showed that it was impossible to free the conjunctival cul-de-sac entirely from the organisms, even with antiseptic solutions; that the best which could be hoped for was a reduction in their number, and that for this purpose thorough syringing of the eye with solutions of boric acid or common salt was as efficient a method as any. The milder solutions should therefore be employed, atropin instilled if the iris is involved, and a bandage applied.

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[4] Weeks: *Journ. of the A. M. A.*, Aug. 4, 1906.

[5] Hauenschild: *Ophth. Klinik*, 1898, No. 16.

[6] Bach: *Archiv f. Ophth.*, 40, 3, 1894.

[7] Helleberg: *Mitteil. aus d. Augenklinik zu Stockholm*, Vol. 3, 1901.

[8] Axenfeld: Lubarsch and Ostertag's *Ergebnisse der Allg. Pathologie*, 1901, p. 54.

[9] C. v. Muralt: *Die Staarextraction der Ophth, Klinik in Zurich, Diss.*, 1881.

Similar preparations must be made before any operation upon the eye, especially if the ball is to be opened. In every case the conjunctiva should be examined, and if a discharge is detected, it should be examined for microörganisms, both by a coverglass smear and by culture. If bacteria in any number are found, operation should be postponed and treatment of the catarrh instituted until it is cured. The lacrymal passages must also be tested and pressure made over the sacs to see whether fluid can be pressed out through the canaliculi. Haab[10] advises, in every case, syringing of the sac and duct through the dilated canaliculus, and examination of the fluid which emerges from the nose, in a black rubber receptacle, which will reveal any turbidity of the solution. If a decided dacryocystitis exists, this must be cured, by extirpation of the sac if necessary, or, if immediate operation is demanded, the canaliculi should be closed by the electrocautery, or by encircling them with sutures.

Previous to the operation the surrounding parts should be carefully cleansed as in any surgical operation, particular attention being paid, as before, to the lid margins, the conjunctiva should be flushed with boric acid or normal salt solution, and the eye bandaged for an hour beforehand to prevent infection from the outside. At the time of operation the lid margins should be again carefully cleansed, the eye syringed with one of the same solutions, and one or two drops of a solution of bichlorid of mercury (1-5000) dropped on the cornea before the incision is made. The care to be observed in the preparation of the solutions used, the sterilization of the instruments, dressings, and the surgeon's hands will be considered in another paper in the symposium.

Having completed the operation, what shall be done to prevent infection from the conjunctiva and lacrymal sac? Where immediate operation has been required, despite the presence of a suspicious secretion from the sac, I believe that Haab's suggestion to sprinkle powdered iodoform in the inner canthus is an extremely valuable one. The iodoform is found in the form of a cake, at the first dressing, which absorbs the lacrymal secretions and prevents them from entering the conjunctival cul-de-sac. In no case have I observed any irritation from its presence, and prompt healing has been obtained in cases where persistent treatment had failed to free the conjunctiva entirely from microörganisms.

Finally comes the much mooted question whether we shall bandage the eye or employ the "open method" recommended so strongly by Hjort,[11] and in a modified way by Fuchs and Czermak. It has been shown by Bernheim,[12] Marthen[13] and others that the number of bacteria in the conjunctival sac is increased by the application of a bandage, and that the danger of infection of the wound is thereby greatly magnified. This increase is attributed partly to the greater warmth beneath the bandage, and to the stagnation of the conjunctival secretion, which is normally forced onward through the lacrymal canals by the movements of the eyelids. On the other hand, the enforced quiet underneath the bandage hastens the healing of the wound. The experiments of Clarke[14] showed that, after linear corneal incisions in rabbits, the anterior chamber was restored in fifteen to twenty-five minutes if the animal was kept under the anesthetic, whereas two hours were required, in the majority of instances, if it was allowed to run around. Moreover, it has been proven by Dalén[15] that if the organisms have been reduced in number by the careful cleansing methods which are employed previous to operation, the increase in their number is not apparent until twelve hours after the bandage is applied, and that the organisms which are then found are chiefly the *Bacillus xerosis,* and white cocci of very slight pathogenicity. In the majority of cases, with a quiet patient, the wound will be closed in twelve hours, and the danger of infection is past, unless the wound reopens, which may happen as late as the tenth day. The bandage, moreover, absorbs the tears, so that the patient is not tempted to rub the eyes with the fingers, and he does not attempt to test his visual acuity. As Snellen[16] observes, a series of cases treated without bandage usually results in an increased number of iris prolapses, hemorrhages into the anterior chamber, and other disturbances to prompt healing, which, after all, is the point of greatest importance. We are, therefore, acting for the best interest of the patient and his comfort, as well as in a perfectly scientific manner, by applying for the first few days a carefully adjusted bandage, which can be reinforced at night by a stiffer arrangement, such as the Ring mask, or Fuchs's wire shield. If the bandage is removed as soon as the wound is firmly healed (usually in three or four days), and the eye protected simply by the mask, the conjunctiva is kept in the best condition, and in the event of accidental reopening of the wound, or the necessity of further operative interference, the chances for healing without infection will be the most favorable.

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[10] Haab: *Augen-Operationslehre*, Munich, 1904.

[11] Hjort: *Centralbl. f. Prakt. Augenheilk.*, May, 1897, p. 138; ibid., Nov., 1897, p. 329; ibid., 1898, p. 296; ibid., Feb., 1898, p. 33.

[12] Bernheim: *Beitrage z. Augenheilk. von Deutschmann*, Vol. I., 1893.

[13] Marthen: *Beitrage z. Augenheilk. von Deutschmann*, Vol. 2, 1893.

[14] Clarke: Internat. Ophth. Congress, Utrecht, 1899.

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[15] Dalén: *Hygeia,* I. p. 326, and *Mitteil. aus d. Univ.-Augenklinik zu Stockholm.*

[16] Snellen: *Operationslehre, Graefe-Saemisch Handbuch der Gesamten Augenheilk.,* 2nd Ed.

A synovitis that persists despite careful treatment should arouse suspicion of tuberculosis.—*Am. Jour. of Surg.*

POSTOPERATIVE INFECTION IN EYE SURGERY.

BY GLENDON E. CURRY, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Postoperative infection, like many other problems that arise in medical and surgical practice, is best met by prevention. However, all operators are apt to be overtaken by an infection following an operation, despite the most stringent precautions. To cite an example: as painstaking and skillful an operator as our chairman, Dr. Risley, reported an instance of infection as a sequel of a cataract removal after the opening of the new Polyclinic Hospital, some few years since. Here in a room, never previously occupied, with hitherto unused furniture and bedding, and an entirely new Graefe knife, together with every aseptic caution, an operation which was free from complications was yet followed by panophthalmitis.

Different authors give the percentage of wound infections from one to four per cent. Statistics of American and European operators, collected by Ring in 1895, indicated failures amounting to 3.87 per cent. Theobald states that fifty years ago, the most skillful surgeons had a record of twelve per cent. of failures and gives as causes for the better showing of to-day, the introduction of antiseptic principles, better nursing, improved hospital facilities, and the more definite specialization of eye surgery. He also believes that some of our misfortunes of the present day can be attributed to the fact that many cataractous eyes are diseased in other respects, and therefore incapable of resisting the shock of operation; moreover, most of the patients are of advanced life, one per cent. showing glycosuria, six per cent. albuminuria, and a still larger proportion arteriosclerosis, thus not being in the best condition for withstanding surgical action of any kind; and, furthermore, temperament plays no inconsiderable part in every operation. With this opinion, I think the medical body, as a whole, will fully concur, not only in surgical processes, but in any other mode of treatment.

It is a well established fact that many bacteria exist in the conjunctiva at all times, and that no antiseptic preparation or method, now at our command, renders a perfectly aseptic field for operation. Hanford McKee in a series of 140 examinations in the healthy conjunctiva, in the Royal Victoria Hospital, Montreal, during the years 1902-03, found *Staphylococcus pyogenes albus* forty-eight times; *Staphylococcus epidermis albus,* nine times; *Staphylococcus pyogenes aureus,* twice; *Streptococcus pyogenes,* sixteen times; *Bacillus xerosis,* forty-two times; bacillus of the diphtheria group, once; *Sarcina lutea,* once. A total of one hundred positive results, forty negative. These were all carefully selected subjects, all cases of hyperemia of the conjunctiva being rigidly excluded. McKee's experience leads him to conclude that in the normal conjunctiva we are most likely to find the ordinary pyogenic bacteria and also the *Bacillus xerosis.* Having these organisms to combat, then, in a normal condition of the conjunctiva, it is much more difficult to obtain an aseptic field of operation should conjunctivitis or disease of the lacrymal sac or canals exist.

Another source of infection is no doubt from saliva. It, as is well known, abounds in microörganisms, which may come in contact with the corneal wound either by particles on the instruments or minute drops from the surgeon's mouth. Hotta at Uhthoff's clinic at the University of Breslau, found in his experiments that salivary infection was by no means infrequent, particularly if the operator was obliged to talk much, either in directing or quieting the patient or as an instructor, and earnestly recommends the wearing of mouth veils or masks, consisting of several layers of gauze, this also being distinctly indicated if any coryza existed.

To manifest the efficiency of these mouth veils as a preventive measure, Hotta used a gargle of bouillon containing cultures of the *Bacillus prodigiosus* and then speaking for two minutes toward a Petre's plate covered with neutral agar, held at an angle of forty-five to sixty degrees, distant twenty-five, thirty and forty centimeters, found in seven experiments the number of cultures without gauze to be twenty-four; through one layer, seven; two layers, one; and three layers, none whatever. De Leon's experience fully confirms Hotta's, both as to the origin of the infection from saliva and as to the value of the mouth shield.

The presence of microörganisms which are detrimental to wound healing must be combated with similar weapons in eye surgery as in other surgical procedures, but the eye surgeon has an additional difficulty in never being sure that he is operating in a sterile field, although he may have taken every means within his power to obtain such, for, owing to the delicate structure of the eye and its great sensitiveness, many agents at the command of the general surgeon for aseptic and antiseptic purposes are denied him. Many surgeons have some one feature they emphasize in operations, or in the preparation of an eye for operation. Time will not permit a detailed analysis of the various preliminaries, but briefly: (1) The field should be rendered sterile or as nearly so as possible; this embraces irrigation of the nares and lacrymal sac, cleansing of the lids, lashes, and adjacent cutaneous surface. (2) All instruments should be well polished and perfectly sterilized. (3) All solutions should be freshly prepared and sterilized for each operation. (4) Pipets, bottles, and all dressings should be made aseptic and the principles of asepsis rigidly applied. Berard advocates the use of Doyen's antistaphylococcus serum which depends upon the antagonisms of the saccharomyces upon the staphylococcus and he regularly injects five cubic centimeters of the preparation in the muscles of the buttocks as a preventive of suppuration before extractions and iridectomies where there is the slightest reason for apprehension.

There is a vast difference of opinion among surgeons relative to the open wound treatment after cataract operations. Vollaro, in a bacteriologic study of the conjunctiva after operations treated by the open wound method, where but a few folds of gauze were placed over the eye and kept in proper position by a wire shield fastened to the brow, nose, and cheeks, and in those treated with occlusive dressings, found an increase in the number of germs within a few hours after operation, but that the increase was much greater in eyes treated with the occlusive bandage. It was also noted that the germs found after operation were of the same species as those found in the conjunctiva immediately preceding operation. Morax, Marthen, Bach and others have observed a decided increase in the bacteria in the conjunctiva after the removal of a twenty-four hours' bandage. Pihl thinks the bandage not only superfluous but at times harmful, and, as it is used chiefly for protection, it should be superseded by the embossed shield which accomplishes the same result to better advantage as it permits drainage of the wound and the physiological toilet of the eye to go on without interruption. Hjort also favors the unbandaged eye following cataract operations. Bocchi thinks the omission of the bandage a decidedly progressive step in ophthalmic practice and coincides with Fuchs in his method of having the patient keep the eyes closed, if possible, after the removal of the lens, placing a pad of six or eight layers of sterile gauze over the eye and this kept adjusted by a wire shield mounted to fit the face, which he does not permit to be disturbed until the third day. Bocchi further claims, as the shield causes no pressure on the eyeball, the possibility of injury is eliminated and that there is a better adaptation of the edges of the wound, and a more perfect cicatrix is formed, thus shortening the period of cure.

Wicherkiewicz asserts that fine results are obtained by his open method which consists of covering the gently closed lids with a particle of brown tissue paper fastened with mucilage. The patient is warned that he must not use the eye although it is perfectly free under this cover. Personally, I have found a small pad consisting of a few layers of sterilized gauze and cotton, with a light gauze bandage, to furnish as satisfactory a postoperative dressing as any that have been proposed.

Dulcos, as a result of bacteriological research upon eyes infected after cataract operations, examining the tears, the mucous filaments floating in the conjunctival fluid, pus found in the anterior chamber, pus found in the margins of the wound, intraocular pus where enucleation had been performed and also that remaining at the bottom of the cavity several days following evisceration, and, when present, discharge from the nasopharynx, concludes that postoperative infection always begins at the wound margins and is usually due to pneumococci and streptococci. Clinically, the suppuration due to the pneumococci appears as a dense, whitish slough extending toward the vitreous, and that caused by the streptococci produces a free conjunctival secretion and apparently infiltrates the entire cornea.

Bourgeois avers that the site of infection is invariably at the fundus but admits two forms of infectious results: (1) The graver ones, originating in the cornea twenty-four hours after operation; (2) the less serious ones beginning in the uveal tract from five to ten days after operation, but which destroy the sight unless appropriately treated. The infective cause is the same in all cases, varying only in virulence from the number of colonies and their location.

Treatment consists of cauterization or curetage of the wound, subconjunctival injections and germicides introduced into the anterior chamber. Cauterization may be accomplished by means of the galvanocautery, silver nitrate, mercuric bichlorid, carbolic acid, or formalin. Bourgeois states that the only reliable treatment is subconjunctival injections of cyanid of mercury, using in severe cases one centigram of 1-1000 solution, repeating in twelve hours, until seven or eight injections are given. Hansell recommends bichlorid injections into the anterior chamber. Kraus advocates the frequent opening of the wound and the irrigation of the anterior chamber with a solution of oxycyanid of mercury. Knapp also thinks more efficient results are obtained by daily opening the wound and draining the anterior chamber.

Iodoform rods introduced into the anterior chamber are asserted by Kraus to be worthless. Hartwig and Frank report failure and Cohn has also found them disappointing,while Oswalt concludes after much experimental work that the use of iodoform rods is not advisable.

On the contrary, Haab, says, after treating some fifty cases by this method, that it is probably the best drug we now have for intraocular disinfection, although, in instances where the infection has spread extensively or is very virulent, it fails to give results. Wokenius reports three cases treated by the introduction of iodoform into the vitreous with success, and advises its use in connection with other rational surgical treatment where infection is present or suspected. Injections subcutaneously of the antistreptococcic serum of Marmorek have been used in some instances but without advantage. The general treatment consists of mercurial inunctions, milk, diet, purgatives, and antipyretics.

In conclusion, when we survey the whole field of postoperative infections, knowing that many microörganisms exist in the normal conjunctiva and that it is frequently necessary either to operate upon the eyes that can not be freed entirely from the conjunctival and lacrymal disease or else allow the patients to remain either partially or hopelessly blind, it would seem from data collected that there is little likelihood of reducing these infections below an average of two per cent. Indeed, this may be regarded as a very low rate of nonsuccess, considering the obstacles to be encountered. However, ophthalmic science is optimistic and will ever strive toward the ideal of perfection, and hope to eliminate all cases of failure.

THE TREATMENT OF ULCER OF THE CORNEA.

BY EDWARD STIEREN, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In reviewing recent text-books on diseases of the eye I have been impressed by the lack of definite instructions to guide one in the treatment of ulcer of the cornea. Some authors strongly advocate bandaging the eye while others as warmly recommend leaving the eye open. Almost all indulge in the dogmatic statement that central ulcers should be treated with atropin while peripheral ulcers should have the pupil contracted with a miotic. Frequent cleansing with watery solutions ranging in antiseptic value from sterile water to various strengths of bichlorid of mercury are likewise arbitrarily recommended, and a long list of chemical cauterizing agents as well as the actual, thermic and electric cautery, is given from which a choice may be made.

Close contact with medical students for a number of years has acquainted me with the perplexity with which they regard this common affection and the difficulty to decide on the appropriate treatment when a rebellious case confronts them. If, for instance, the condition is one of deep marginal ulcer with hypopyon, a catarrhal conjunctiva discharging freely, low grade of iritis with considerable pain, the novice asks himself, shall I use atropin or eserin; shall the eye be left open or bandaged; how frequently shall I cleanse the conjunctival sac and with what agent shall I cauterize the ulcer?

Cauterization or stimulation of the ulcer should not be thought of in the early stages of a corneal ulcer, and it is a question in my mind whether the employment of eserin or pilocarpin ever prevents an iris from prolapsing into a marginal ulcer when it perforates and is accompanied by a sudden gush of aqueous humor. It has been my experience to have the iris engage in the perforation no matter how strongly the pupil had been contracted before. I am also confident that too frequent cleansing of the eye has an untoward effect on the reconstructive process of this delicate structure and can only be looked upon as meddlesome interference with Nature.

That the cornea possesses recuperative power in no small degree under favorable circumstances is evident from the rapidity with which union takes place after corneal section. This, then, is the keynote in successfully treating ulcers of the cornea—cleanse the conjunctival sac thoroughly, keep it as aseptic as possible and aid the cornea in its reparative efforts.

The first indication is met by flushing the conjunctival sac with liberal quantities of saturated boric acid solution, using an irrigating lid retractor which facilitates cleansing the retrotarsal fold and sulcus. All exposed conjunctiva should be gently wiped with pledgets of cotton while the eye is being irrigated and pressure should be made over the lacrymal sac repeatedly during the cleansing process. It is rarely necessary to cleanse the eye oftener than twice in twenty-four hours.

Keeping the conjunctival sac as aseptic as possible is accomplished by filling it and covering the lid with 1-3000 bichlorid of mercury ointment, prepared as suggested by Dr. White of Richmond.[1]

The third indication, aiding the cornea in its reparative process, is an all important one. The eye should be put at rest by closing it with a comfortable cotton dressing, thoroughly atropinizing it and keeping the patient quiet in a moderately darkened room. Greater resisting powers can be accorded the cornea, and more rapid healing of the ulcer induced, by dusting a small quantity of dionin under the lower lid after the eye has been cleansed and before the bichlorid ointment has been introduced. As dionin is also an analgesic it has the added and distinct advantage of rendering the patient more comfortable. Moist heat applied to the lids is of undoubted benefit in aiding the cornea to throw off necrotic tissue and to assist in new cell growth. It is best applied with cotton

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[1] I have modified and I believe improved Dr. White's original formula by adding a small amount of lanolin in which to dissolve and work up the bichlorid of mercury and chlorid of sodium, as follows:—

℞ Hydrargyri bichloridi	gr. I.
Sodii chloridi	grs. V.
Adeps lanæ hydrosi	q. s.
Petrolati	oz. VI.

The sodium chlorid and bichlorid are dissolved and rubbed up in about one dram of lanolin; the vaselin is boiled for five minutes, the impregnated lanolin added and, after boiling for five minutes longer, the liquid ointment is poured into jars. After it has cooled it will be found to be of a proper consistency to introduce under the lids, becoming slowly melted by the heat of the body and permeating to all parts of the conjunctival sac.

pledgets moistened in hot sterile water or boracic solution for one half hour immediately preceding the cleansing of the eye.

Indolent ulcers and ulcers showing a tendency to spread are best treated with light applications of tincture of iodin. Besides the stimulating and antiseptic properties of this agent, the iodin it contains appears to exert its alterative action and aids the tissue by promoting new cell growth. When the ulcer has healed, the scar is less dense than when the stronger chemical agents have been used—carbolic acid, trichloracetic acid and nitrate of silver—which I have discarded years ago for this reason.

The use of the cautery I reserve for but one class of cases, viz, corneal abscess,—a purulent infiltration in the substance of the cornea covered both anteriorly and posteriorly by sound tissue. The liberation of the pus in these cases by cauterization is invariably followed by relief from the excruciating pain which usually accompanies this complication.

A class of cases demanding special attention is ulceration of the cornea occurring in gonorrheal ophthalmia or in ophthalmia neonatorum. We have here a condition in which we can not bandage the eye and one in which it is impossible to attain even a moderate degree of cleanliness and asepsis of the conjunctival sac. In the newer silver salts, protargol, argyrol, etc., we have remedies which, while their efficiency as bactericidal agents is still a matter of debate, are of undoubted value as protective and cleansing agents in gonorrheal ophthalmia if the eye is kept immersed in them. During the past two or three years I have observed in a number of cases of corneal ulceration in gonorrheal ophthalmia that the ulcers became filled with a brown gelatinous exudate which resisted wiping off and formed a protective covering for the ulcerated area, denying further entrance to the bacteria. It was surprising to note that, when the ulcers had healed, it was not with brown scars as might naturally be expected, but with grayish opacities, less dense than when strong cauterizing agents had been used.

I believe that much of the good resulting from the use of these remedies in gonorrheal ophthalmia is due, not so much to their powers as germicides, but to the fact that the strength in which they are commonly employed, being so much heavier than the secretions of the eye, they float out pus and secretions carrying innumerable bacteria which would otherwise remain in the crypts and folds of the conjunctiva and continue the infection indefinitely.

AFFECTIONS OF THE EYE, ARISING FROM AUTOINTOXICATION OF ENDOGENOUS ORIGIN.

BY HOWARD F. HANSELL, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The subject selected by your chairman for my contribution to the symposium on "Ocular Infections" is comprehensive and if we admit a broad definition of autoinfection it includes affections, both organic and functional, of great variety and distribution.

Herter (*Cleveland Medical Journal*, October, 1897) divides the subject into two groups. He says, "An autointoxication may arise either from poisonous substances that result from digestion or from the activity of microörganisms which normally inhabit the gastrointestinal tract, or from substances that are the product of the activity of one or more kinds of body cells." The two groups are, then, intestinal intoxication and metabolic autointoxication. Discussion of all the diseases suggested by the title would be unseeming even if time permitted. I will confine my remarks, therefore, to the history of a few affections that offer the greatest interest and practical application.

I believe we are inclined to forget that ophthalmology is not an isolated specialty and that all diseases of the eye are, or should be, included in the domain of the general practitioner. The habit of excluding ocular affections from the sphere of general medicine comes about in great measure from the insistence of writers and teachers of ophthalmology of the disproportionate value of errors of refraction in the causation of disease, and consequently the far-reaching and ever-spreading cures by the correction of those errors by glasses, and partly from the timidity and confessed ignorance of many practitioners in the diagnosis and treatment of diseases of the eye. Do not misunderstand my meaning or be impressed with the idea that I underrate the importance of accurate refraction work or am unappreciative of its enormous value in removing distressing symptoms. I desire to convey to you the close relation which diseases of the eye bear to diseases of the body and the dependence of their successful treatment upon a correct understanding of the general bodily conditions that so frequently underlie them. It is said that eighty per cent. of headache is due to eye-strain, but it is not claimed that eighty per cent. of headache can be cured by glasses alone. Too many factors must be considered as contributors for us to state dogmatically that eye-strain is only a tired ciliary muscle. On the other hand, it is equally futile to assert that remedies directed to the stomach, intestine, or kidney can relieve eye-strain without the aid of glasses.

Endogenous ocular diseases are those which are caused by a poison created within the body in an organ other than the eye and conveyed by means of the circulatory or lymph systems from the affected organ to the eye. They are, in their pathogeny, distinct and separate diseases from those which involve the eye from germs or poisons acquired from sources without the body or ectogenous diseases. For example, the iritis of syphilis and rheumatism, the amblyopia from lead and nicotin, the retinitis of nephritis are part of the original disease and are in nowise to be considered endogenous in their origin. Still a third class might be made of those affections which are partly ectogenous, and possibly endogenous, in causation. Primarily they belong to the former, secondarily to the latter. Thus, it is well known that intestinal parasites cause ocular diseases of various kinds. In children corneal ulcer is often cured only after the administration of an anthelmintic and the expulsion of the lumbricoid or the seat worms. In adults vitreous degeneration and choroidal atrophy may be due to the presence of the tapeworm. Groenouw (second edition Graefe and Saemisch, 26 and 27 monograph) says the proof of the causative connection between the presence of worms in the intestinal canal and the ocular affection lies principally in that, after the expulsion of the parasite, healing or at least considerable improvement is noticed.

The diseases of the eye are induced through reflex action through the central or sympathetic nervous system, perhaps also by a toxic action of certain products of the parasite or by direct damage to the ocular structures by the migration to the eye of the embryos or finally through anemia or other general disease by which the eye was secondarily involved.

A distinction should be made also between autointoxication and metastasis whenever possible. It must be admitted that bacteriologic examination has not always been able to furnish convincing evidence of either the means of transmission of the poison or its exact nature, and, hence, the terms autointoxication and metastasis are used by most authors interchangeably. I should define the former as a lesion induced in a distant organ by an agent created at the original site of the disease; the latter, as a conveyance to a distant organ of one or more of the elements that make up the original disease. As an example of autointoxication may be cited panophthalmitis associated with or consecutive to abscess of the liver. An example of metastasis is tubercle of the choroid dependent upon tuberculosis of the lung. In both, the function of the excretory organs of the body is deranged. In Bouchart's great monograph, "Autointoxication," translated and added to by that careful student, Thomas Oliver (second edition, March, 1906), are the following words, the truth and value of which must appeal to every practitioner: "I have said that the organism in its normal as in its pathologic state, is a receptacle and a laboratory of poisons. Among these some are formed by the organism itself, others by microbes (minute forms of vegetables) which either are the guests (normal inhabitants) of the intestinal tube or are parasites at second hand, and disease producing. Man is in this way constantly living under the chance of being poisoned; he is always working toward his own destruction; he makes continual attempts at suicide by intoxication. And yet this intoxication is not realized, for the organism possesses numerous resources which enable him to escape the intoxication which is always threatening." We are, therefore, constantly exposed to poison germs from without of infinite variety which, should they find suitable reception in our bodies, would soon end our careers. And the poison germs are not only from without. The useless products of digestion and assimilation if not discharged through their proper channels, but absorbed into the blood and conveyed through the circulation, would disorder function and destroy life as is well shown by Bouchart.

Endogenous infection of the eye usually has its starting point in the uveal coat, either as a minute thrombosis or a miscroscopic collection of bacteria. Next in frequency to the choroid is probably the retina and finally the vitreous and aqueous humors. Axenfeld (*Berliner klin. Wochens.*, No. 41, 1896) says that, clinically, it is seldom possible to determine the place of infection but that in his examinations the retina is the primarily affected membrane, because of its fine capillaries. The cornea, the common site for ectogenous infection, such as that from injury or from disease of the cavities accessory to the orbit, is seldom, if ever, the starting point for endogenous infection. Axenfeld adds that local conditions may have an influence in determining the site, such as degeneration of endothelium, marasmic thrombi or senile vessel change. Schmidt-Rimpler (*Die Erkrankungen des Auges in Suszammenhang mit anderen Krankheiten*, 1898) believes from his studies of eyes destroyed by metastatic ophthalmia, that the pus cells proceed into the vitreous humor from the choroid. All observers agree that the vitreous humor furnishes a suitable soil for the propagation of the bacteria, and the unhappy experiences of operators who have attempted to combat infection following operation or traumatism in which the cornea has been incised or perforated, is sufficient to prove the fertility of the aqueous humor without the evidence of experiment. Selenskowsky and Woicekowsky (*Archives of Ophthalmology*, Sept., 1903) have added to our knowledge of the comparative resistance to infection of the vitreous and aqueous humors by a large number of experiments on rabbits and cats. In their truly scientific article, after giving the history of previous experiments in the same line and the results of those experiments, they give the following conclusions: With a weak or moderate general infection the passage of bacteria circulating in the blood into the vitreous humor is much impeded by some conditions present not only in normal eyes but also those in which the anterior segment has been irritated, a condition which highly favors the entrance of the same bacteria into the aqueous humor; in the presence of irritation of the posterior part of the eye a certain degree of severity of the general infection is necessary to favor effectively the passage of the bacteria. When both portions of the eye are irritated, the general infection need only be weak or moderate. They deduce, first, that the vitreous humor is a more favorable site for the propagation of bacteria than the aqueous, and second, bacteria circulating in the blood may enter the vitreous and the aqueous humors in the absence of all inflammatory, embolic or thrombotic processes in the vessels of the eye, and to permit their passage their trophic action on the vessel walls is sufficient. All of which experimentally shows the liability of the eye to endogenous infection, whether or not the eye has been subjected to traumatism.

These experiments and those that have preceded them demonstrate the great advance recently made in this line of ophthalmology, and they serve to explain how disease in remote organs may induce ocular disease. In this connection a brief review of the diseases of the body which give rise to endogenous infection of the eye may not be out of place. In the acute fevers, including erysipelas, diphtheria, influenza, cholera, and dysentery, the eye may be only slightly involved or the infection may be so violent that every tissue is destroyed. Metastatic ophthalmia and orbital abscess are not uncommon in puerpera, surgical or idiopathic septicemia and pyemia due to the presence of the *Streptococcus pyogenes* and staphylococcus. In some of the fevers the pneumococcus, the typhus bacillus and the influenza bacillus are found. A true pyemia induced by the poison of acute articular rheumatism may have as one of its symptoms purulent ophthalmia originating in the uveal coat. The toxic amblyopias caused by the ingestion of the various vegetable and mineral poisons involve the tissues of the retina and optic nerve by the toxic influence of the agents themselves or through their indirect action upon those structures by destroying the function of the stomach or of the abdominal organs. Paralysis of the intraocular and extraocular muscles and acute amblyopia may sometimes be traced to the action of the stomach and intestinal secretions upon stale meat, rancid cheese or overmature shell fish.

Liebricht (*Klin. Monatsb. f. Augenh.*, Sept. 3, 1903) reports a striking example of staphylococcus infection. A boy suffered with a boil on the forehead and infiltration of the surrounding tissues. In pure culture made from the blood was found an enormous number of colonies of staphylococcus, showing that the blood current was the carrier of the infection to the eye. The purulent ophthalmia was not caused in this instance, as might have been supposed, by direct infection because of the proximity of the boil to the eye. The same author reports a case of metastatic streptococcus ophthalmia following a traumatic abscess on the right side of the back in a man thirty-nine years of age. Immediately after the formation of the abscess the supraclavicular, cervical and axillary glands became swollen, the joints inflamed and a paranephritic abscess formed. Ophthalmia developed fourteen days after the blow. Streptococci in great abundance were found in the enucleated eye.

Infection of the eye by the tubercle bacillus is well known. The disease usually originates in the uveal coat and spreads to other tissues, eventually destroying the eye. The tubercle deposits may be confined to the eye or may be secondary to tubercular disease of other organs. To the gonococcus is attributed the causation of articular swelling and uveitis following chronic gonorrhea of the urethral canal. Thus far, however, gonococci have not been discovered in the aqueous humor nor in the iris. De Lapersonne (*Arch. d'Ophthal.*, March, 1905) concludes that it is difficult to admit at the present time, a direct action of the gonococcus on the iris and believes we may doubt the existence of a gonococcus iritis, strictly speaking. Cheatham (*Arch. of Ophthal.*, Vol. XXV., No. 4) says it is supposed that the attacks are excited by the ptomains of toxins generated by the gonococcus rather than by the presence of the microörganism itself. Cause of Wurzburg (*Zeits. f. Augenh.*, XL.) saw a case of double dacryodenitis in a man aged thirty-five years with relapsing gonorrhea. He assumed hematogenous toxic metastasis as the cause. Von Michel (*Zeit. f. Augenh.*, Vol. VII., 1902) saw involvement of the optic nerve and retina both primarily when the retina was the site of the metastatic bacteria and secondarily to infection of the choroid in epidydimitis, endocarditis, pyemia and septicemia.

I have endeavored, however imperfectly, in this short paper to show the bacteriologic connection between diseases of the body and diseases of the eye. Functional disorders of the eye have been intentionally omitted for, while I believe and have intimated in the first page the dependence of ocular pain and of headache, said to be ocular, often originating in disturbed general functions, they are not properly within the scope of this paper.

DISCUSSION.

Dr. L. Webster Fox, Philadelphia: When we analyze these very important subjects, I feel that much has been added to our knowledge of ophthalmology. The knowledge that the microscopist has given us must not make the neophyte dread an operation. Nature, in her wonderful laboratory, guards against the inroads that bacteria might otherwise make against the successful termination of such an operation. With the knowledge one possesses, it behooves one to aid nature. We must fortify the system by preliminary treatment.

This, I have found, is best attained by eliminating the red meats and increasing the vegetable régime. We also know that whenever we have an injured eye, mercury is our best drug. Taking advantage of this knowledge, my thought always is to prepare the eye for traumatism made by the knife and scissors. I find nothing better than to give the patient one to two grains of gray powder three times daily, for a week before the operation. My results confirm this procedure. The day previous, and the day of the operation, the orbital cavity is thoroughly irrigated with bland lotions; and immediately after the operation, a dressing of sterilized vaselin completes my work. No one should operate if lacrymal disease is present. These patients should be referred to the laryngologist for examination; and if there is an obstruction in the lacrymal canal or any breeding-spot for such germs as produce pus, this should be eliminated. The success of the operation depends largely upon the skill of the operator. Whenever a clean cut is made, rapid healing follows. Always beware of the zigzag cut and the torn iris. A bruised eye never heals promptly; much anxiety follows, and the patient, as a rule, suffers.

Dr. Stieren, in his paper on ulcers of the cornea, has covered the subject thoroughly. However, he has omitted a drug that has been of great value in my practice. This is trichloracetic acid. I have used it for some years in ulcers in which there is pus following the loss of corneal tissue. I apply a ten, twenty, or fifty per cent. solution with a small wooden spatula. In this treatment, I have never been disappointed. There are other methods, but the time is too limited to allow me to discuss the subject more fully.

In some forms of intractable ulcers, we must resort to operative procedure. It is then that we find the actual cautery invaluable I must also call attention to peridectomy, complete or partial,—a most radical procedure.

Dr. Wendell Reber, Philadelphia: I have been particularly interested in the paper presented by Dr. Hansell, because I have recently had a case of what I believe to have been a true endogenous infection. The patient was a colored man of about twenty-three or four years of age, with no luetic element that could be made out. He had a rheumatic tendency and was the subject of defective elimination, the urea being decreased and indican increased quite persistently. He developed an iritis, with the most typically appearing bacterial colonies in the anterior chamber of from twenty-four to thirty-six hours' duration, —not longer than forty-eight hours at the outside. There was no involvement after accessory sinuses. The tuberculin test gave a negative result, and nothing except this slight rheumatic tendency could be found that was of any etiological value. The eye wanted to pursue the course of a purulent ophthalmia. After the most persistent treatment with mercury biniodid, quinin and atropin, the condition was finally arrested; but after three months, the eye became soft and showed the signs of what looked like a typical degeneration. Whether it was or was not endogenous can not be said with absolute certainty. It was certainly not from without. The cornea was repeatedly stained and examined minutely, and no possible point of entrance could be found. Cases of endogenous infection, in my opinion, occur oftener than we at present believe.

Dr. Howard F. Pyfer, Norristown: I am glad to hear Dr. Shumway speak of using iodoform in the eye. The objection is the pain the patient suffers until the iodoform is made pasty by the tears. I avoid this by using one per cent. carbolic acid ointment with vaselin as a base, and then bandaging the eye. The results after removing the bandage have been very good. In infection of the cornea, when perforation is threatened, iodin is not valuable. I have repeatedly seen it applied (U. S. P. tincture) directly upon the ulcer, and the results have been disappointing. On the contrary, the use of the cautery was gratifying.

I agree with Dr. Stieren in opposing frequent washing out of the eye. The usual treatment of giving a bottle of boric acid to the patient and telling him to go home and apply it every two or three hours, is very unsafe. After the solution has been in the hands of the patient a day or two, if examined, it will be found cloudy and full of dirty particles. Cleansing the eye by the oculist twice a day, and applying treatment, is by far the better plan.

In regard to gonorrheal ophthalmia and the different applications for it, I have seen eyes go from bad to worse under the use of the solutions of the organic silver salts, like argyrol and protargol. I prefer nitrate of silver, though it is more painful.

Dr. Edward B. Heckel, Pittsburg: The ground has been so thoroughly covered that it seems impossible to add anything to it. The manner of treating postoperative infection consists in prevention. It depends more upon careful technic and attention to every detail than upon anything else. That attention should not be before the operation alone, but during and after the operation also. Frequently operators make the mistake of allowing their resident physicians to look after a certain amount of detail for them. Some years ago, I used to think that it was one of my functions to permit the resident to do as much as possible; but I now think it is my function to do as much as possible myself, and I have been getting much better results since I have taken this stand.

As to the use of antiseptic solutions for irrigations, I do not believe in them and never use them. I adhere to a sterile normal salt solution, using plenty of it, so as to cleanse the eye and the conjunctival sac mechanically by actual flushes. I use a large pledget of cotton and flush the eye thoroughly. The resident and the nurse are taught to do the same thing, in the same manner.

As to the remedies in the treatment of corneal ulcer, they are legion. It depends upon how we use them, rather than upon what we use. For cauterization I like nothing better than the actual cautery or the electro-cautery, and feel inclined to adhere to the actual cautery. When the platinum probe is heated to a white heat and applied, it is gradually reduced in heat, so we can more readily limit the action of the heat than with the electro-cautery, in which the action of the heat is maintained.

Germicides are useful after corneal infection. A solution of bichlorid and olive oil is usually employed by me, as being more readily applied than bichlorid of vaselin. The oily solutions are less irritating; because, in my mind, being oily, it takes some time to dissolve out the bichlorid; and instead of 1-3000, the eye gets 1-10,000, or 1-12,000. It can, therefore, stand this better than an aqueous solution of similar strength, and there is no irritation.

Dr. John E. Weeks, New York City: I am sorry that I was not here to listen to the papers that were read, but I have no doubt that the field has been covered very well. I fear that what I might say in regard to any of the papers would be of little value. However, I have heard the discussion by the last gentleman, regarding corneal ulcers, and should like to say a few words about the treatment of corneal ulcers.

The use of the cautery has its limitations in corneal ulcer. It is very excellent, in my opinion, if the ulcers are somewhat limited. A small, circular ulcer away from the pupil, or a large ulcer of whatever form that may not include the entire pupil, might be so treated,—cases in which the ulcer has not destroyed the entire substance of the cornea. The use of the cautery is followed by more or less cicatrization; this can often be avoided by employing means that do not establish quite so much tissue destruction. It is my practice to use the platinum point with the spirit lamp, or the galvanocautery, but I prefer the point. I limit the destruction of tissue as much as possible. In the ulcers, however, that involve the pupillary area, I am in the habit of resorting to some antiseptic preparation and using it thoroughly, and have found great satisfaction in the use of argyrol. During the last two or three years, I have used it quite extensively in very severe ulceration of the cornea, and with success. The instillation of a thirty-five per cent. solution is made every hour or hour and a half. The eye is irrigated with boric solution before using the argyrol. I am confident that this treatment has given better satisfaction than other medicinal treatment that I had previously employed.

After the cautery, the use of iodoform is valuable, in the form of a powder or an ointment. The use of an ointment of bichlorid of mercury is also excellent, after the manner that the gentleman preceding me has mentioned. Corneal ulcer is not always controlled by the cautery or antiseptic medication; and one must, in some cases, resort to incision (the Saemisch operation). The evacuation of the plastic exudate and the reduction of the intraocular tension will, in the majority of cases, bring about recovery, with the preservation of fair vision.

Dr. Samuel D. Risley, Philadelphia: If I am allowed a few words from the chair, I wish to express the great gratification that I have experienced in listening to these excellent papers and to the discussions that have succeeded them. Dr. Shumway's interesting study of the bacteriology of the conjunctiva and its relation to ocular infections is most important. Dr. Curry's paper, read by the secretary, introduced the subject of postoperative infection and incidentally discussed the relative value of the so-called open and closed methods of subsequent treatment of operated eyes. I would say that, having tried many methods, I have settled down to a careful, persistent protection of all wounded eyes, by carefully rendering the field aseptic as far as possible, and then protecting the eye against accidental traumatism of any sort with a bandage, which is carefully, but firmly and persistently applied until the danger period is past. To me, this seems decidedly the best method. So far as I know, all of my friends who have had experience in operating use the protecting bandage.

In regard to the treatment of corneal ulcer, as set forth in Dr. Stieren's paper, I, too, am fond of the use of iodoform but in the form of an ointment, with or without atropin. In this form of application the eye is kept constantly under the sedative and antiseptic influence of the drug.

Referring to the use of the cautery, I was much interested in the statement of Dr. Fox as to the value of trichloracetic acid, which has now come to be my almost sole reliance to the exclusion of the actual cautery. It does less damage to the tissues than the actual cautery, and is equally efficient in most instances. Dr. Fox applies it on the end of a stick; I wrap a small portion of cotton around a fine-pointed probe, and dip it into a saturated solution of the acid; throw away all excess by flipping it, and then carefully apply it to the previously dried ulcer. None of these methods of cautery are sufficient in all cases to arrest the disease; and, like Dr. Weeks, I frequently resort to the Saemisch operation in extensive abscesses of the cornea.

I am surprised that so little has been said of subconjunctival injections of salt solution. A few days before leaving home, I had a patient with hypopyon keratitis whose anterior chamber was half filled with pus. The outlook was so bad that enucleation seemed inevitable, but a profuse injection of salt solution, followed by hot salt stupes, resulted in emptying the chamber of pus within twelve hours, and the eye made a speedy recovery.

This is often a most efficient method, also, in cases of endogenous infection. I am personally much indebted to Dr. Hansell for his very valuable and lucid definition of endogenous, in contradistinction to exogenous infections. It should be borne in mind, furthermore, that we should not confuse infections with the toxemias.

Dr. Shumway, closing: I should like to emphasize the point of the use of the mouth guard, mentioned in Dr. Curry's paper. This has not been emphasized enough in ophthalmological works. It has been well proved that infection from the mouth is very frequent, particularly when the operator is speaking before a class of students. You may cleanse the conjunctiva and take every other aseptic precaution; yet, in speaking, you may infect the eye. This may be prevented by wearing a mouth guard. This should be worn in performing any operation upon the eyeball, especially when speaking to the patient is necessary. The words used in directing the patient are the very ones that are sibilant, thus expelling bacteria from the mouth.

In regard to ulcer of the cornea, early cauterization is very effectual and often necessary, particularly in cases of herpetic ulcer. The application of nitrate of silver in a beginning herpetic ulcer of the cornea often produces prompt healing.

As to the cautery, a little instrument in use at the clinic in the University of Pennsylvania consists of a platinum probe to which a little ball of copper is attached. This is heated in a spirit-lamp until the probe is quite hot. The heat of the copper ball keeps the probe hot for some time after being applied to the cornea. The instrument is simple, and is often effectual when the actual cautery is not in working order. It was brought from Europe, twenty or twenty-five years ago, by Dr. Norris.

With reference to argyrol in conjunctival conditions, particularly gonorrheal ophthalmia, there is this distinct disadvantage in its use, aside from the question of whether it is more or less efficient than nitrate of silver: In a deep ulcer, the argyrol will often stain the ulcer so that one can not see what is going on underneath. We have often encountered this disadvantage at the Philadelphia Hospital. One can not tell whether the condition is progressing or not, nor how deep it is going. In one case in which the ulcer did not penetrate, the argyrol stained the cornea and left a pigmentation there. The pigmentation is apt to be quite permanent.

Salt injections are also helpful in all inflammatory conditions of the eye. Oftentimes the complete severing of the conjunctiva around an indolent ulcer promotes its healing. One case at the University Hospital, in which a young child had rapid and almost complete ulceration of the cornea, with infiltration throughout its depth, was healed by this method, when no other seemed of much avail.

Dr. Hansell, closing: I have nothing to add, except to say that my paper is incomplete. I omitted a great many subjects, such as the infection of the eye following disease of the lungs, disease of the brain, and of the cavities accessory to the orbit. These were purposely omitted. I want to add my appreciation of the kind remarks of the chairman.

Dr. Stieren, closing: My paper pleads for a less strenuous and a more considerate treatment of ulcer of the cornea. I believe that much harm is done by early cauterization; and that if we but give nature the opportunity, many ulcers would heal promptly and with less opacity. The eye must, of course, be put at rest; and this can not be accomplished if we allow the patient to go about. Cases of corneal ulcer should not be considered ambulatory.

QUARANTINE.

BY A. B. BRUMBAUGH, M. D.,
Medical Inspector, Department of Health of Pennsylvania, Lecturer on Hygiene, Juniata College, Huntingdon.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It is not my purpose in this paper to attempt to enlighten my associates on the general subject of quarantine, about which so much has been so ably written by men distinguished in sanitary matters; but I propose to call attention to a few matters which may properly be considered under the general head of quarantine. Laws have been enacted by Congress, covering the disposal of cases of an international character which are quarantinable under the law, *i. e.* cholera, yellow fever, smallpox, typhus fever, leprosy, and plague. State laws have been passed dealing with the conditions affecting the particular commonwealths. Cities and towns have adopted regulations which are supposed to be efficient in protecting the inhabitants of each against the prevailing conditions affecting their own citizens. So we have national and international quarantine; maritime, insular and land quarantine; interstate, municipal, house, and cattle quarantine; each dealing with problems, intricate, elaborate and of immense value to our country and to the nations of the earth. Gradually, and by slow processes, we have arrived at a knowledge of what ought to be done, but, even yet, there is very much to learn and still more to unlearn.

The ancients were, by force of the circumstances surrounding them, and, on certain points, far in advance of us. The Israelites of Bible times practiced a quarantine which has not been approached for efficiency in all the centuries that have followed the history of their emigration from Egypt to the "land of promise" and their residence, as a great world power, among the hills of Palestine, and they were not forced into obedience by a code of laws, enacted, tried, amended, reënacted, and finally enforced by police and military authority. It was the word of one man in whom power was invested, and no violations or gainsayings followed. The quarantine, or separation of the leper, was so efficient that no one feared the invasion of his home by one affected by the malady, and it was not quarantine, only separation; and no one violated the injunction of separation. The word quarantine, *quaranto* (forty) has reference rather to time than to the act contemplated. The original reference was to the forty days of Lent; later it was applied to a period of time, usually forty days, but now variable in point of time, during which a vessel or ship, known to be affected with contagious disease, was not permitted by its occupants to communicate freely with the shore or with other vessels. Now it is applied to the time of prohibition of intercourse with a town or its inhabitants, during the time of the prevalence or existence of contagious disease; but the *quaranto* of time has given place to a more rational period, one that will protect individuals and the public against the dangers of contracting the particular disease to which they may have been epxosed, without imposing a burden on the afflicted. This period of time now varies from eight to thirty days, and even a longer time under certain conditions. Methods of quarantine, or separation, vary according to the conception of the persons administering it. It may be loose or rigorous, relative or absolute, and the methods of securing results vary with the community affected. Sometimes the measures are voluntary and at other times must be forced and compulsory. Sometimes it requires the force of authority to prevent the affected individuals from intruding themselves upon those about them; at other times the most vigilant care is needed to prevent unaffected persons from stealthily entering infected places and visiting at infected houses. In some instances we need to quarantine the patient, as in smallpox, scarlet fever, etc.; in others, the contagion or cause of the disease, as in typhoid fever, yellow fever, malaria, etc. In typhoid fever the well, the spring, the stream and the flies should receive our attention. The well may be closed; the spring, abandoned; the stream, cleansed: but who can control the flies? They are a menace to all our methods of quarantine. Long ago the wisest of men said, "Beware of flies, they are communicators of disease." They are our most treacherous enemy in times of the prevalence of infectious diseases, alighting upon any affected object, then hieing themselves away to the house, or the table of the well, or the sick, and in their tread unloading the germs carried on their feet upon the food. Thus many cases of disease occur which seem unaccountable. In the case of yellow fever great progress has been made within a short period of time, and the suggestion made over forty years ago by an observing physician of New Orleans has been accepted; now the patient is protected and the mosquito, the cause of the disease, is quarantined or destroyed. We make progress slowly and accept new views after battling for the old unto the death. Verily the pain of a new idea is a real suffering.

Much valuable time is lost to the activities of the world by our lack of proper information; so we often fight an aimless battle as those who strike in the dark, unwilling to accept the better way of attack, and expose themselves to dangers which might be avoided.

Since the organization in 1876 of Juniata College at Huntingdon, a school for ladies and gentlemen, I have been the physician for that institution, and the practice has afforded me an opportunity for making observations which could not have been found in private practice and in private families. In the early years of my practice I was of the opinion that colds were contracted because there was a disorder of the digestive function and a neglect of proper exercise. At one time during a deep snow when the students of the college could not get out of doors we had fifty-five persons affected exactly alike by colds. In later years I observed that when a student who had been at home for a few days and returned, affected by a cold, other students associated with him or her would become similarly affected, and the cold would spread through classes, and among those associated, until large numbers would become indisposed.

From a large number of observations made, I became convinced that colds were not the result of errors of diet, nor of atmospheric changes, but that they were due to a particular bacillus and were contagious in kind, form, and character, from one person to another. From later observations I am enabled to assert that all colds are the result of contagion, due to a germ, the character of which I have not been able to determine. Not being a practical bacteriologist my deductions are the result of observation and experience; slow, the process, I admit, but accurate in the end. No person has ever contracted a genuine cold or tonsillitis from exposure to atmospheric causes, getting wet or wet feet, in the absence of the definite germ. With this view in mind I directed the nurse of the institution to take every person with a cold or sore throat immediately to the cottage for the sick, where he was quarantined; or to quarantine him in his own room, using frequent fumigation or inhalations of formaldehyd, and continuing until all acute symptoms had passed. Under this rule we have not, for the past four or five years, had any trouble with colds or tonsillitis or *la grippe* spreading among our students.

I have also satisfied myself that jaundice, as well as erysipelas and tetanus, is contagious, and should be carefully quarantined The path of invasion of the germs of these diseases has not been definitely determined, but the fact of their contagious character is clear. The great loss of time to the student, the teacher, the professional man and the man of business from exposure to colds, tonsillitis, *la grippe,* tuberculosis, whooping cough, etc., can not be estimated. The loss of valuable lives and invalidism caused in obstetrical practice by the patients being exposed to the germs of erysipelas, causing septicemia, ought to awaken the profession to a just sense of its responsibility in relation to these supposedly innocent affections.

Every case of cold should be carefully quarantined, and the public should be educated to protect itself against this class of affections which is more destructive than smallpox or typhoid fever. The loss of life, the suffering, the permanent invalidism resulting from *la grippe* a few years ago was well-nigh as great as the ravages of the plague among the ancients. In a paper read before this society about 1890, I expressed the opinion that *la grippe* was contagious and due to a germ. No measures have been taken to prevent the spread of the disease. In my own practice I recognize it as a dangerous malady and promptly separate the patient from others not affected, and in this manner I prevent the spread of the disease.

We grow slowly and suffer as we grow into knowledge, and absorb new ideas only after mental warfare and physical conflict, so I expect opposition to these views and ridicule as I endured less than a double decade of years ago when I declared before the first sanitary convention of Pennsylvania that tuberculosis was contagious, not hereditary, and that persons affected with the disease should be separated from those not affected, that houses occupied by consumptives should be fumigated and renovated before being occupied by others. The egotism and ostracisms of the past ages are certainly repeating themselves in the years as they now pass, only in a somewhat different form. Every man who steps in advance of his fellows, or aside from the beaten path of the usages of the age in which he lives, and dares to express the belief that he has found, or observed something not before recognized, is regarded with suspicion, or followed by ridicule, sometimes of the bitterest character. The physician who first advocated the outdoor treatment and exposure of tuberculous patients to outdoor air was treated with such bitter ridicule by the profession that he was driven into insanity by the wicked criticisms that were heaped upon him.

The disregard of quarantine by the laity is due to the misapprehension of the principle by the physicians and local boards of health. The community is well enough informed on sanitary matters to know that typhoid fever is not a contagious disease, but that it may be contracted under certain conditions. A fire might be kindled by the wayside or on the common, and an unwary person might wander into it and be burned. Why should such person be quarantined? True it is, any other person going into the same fire might be burned, or a wind might arise scattering the glowing embers and start a conflagration, burning many. So the source of a case of typhoid fever may be the cause of many other persons exposing themselves to it; or a swarm of flies may alight upon the *dejecta*, or the lips of the patients and scatter the disease throughout the community. The patient need not be quarantined, but the source of the disease and the flies should be quarantined. There will come a time when all our ideas of quarantine will have been modified and changed, as there will also, it is to be hoped, come a time when broader views of science, religion and politics will be promulgated and recognized. Even now, quarantine and the final destruction of flies and mosquitoes have become great problems in modern sanitation for the world.

THE USE AND A FEW OF THE ABUSES OF THE BROMIDS IN THE TREATMENT OF EPILEPSY.

BY MATTHEW WOODS, M. D.,
Philadelphia.

(Read before the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, at New Haven, Conn., November 8, 1906.)

I feel like apologizing for my temerity in selecting such a subject for a paper to be read before an audience consisting of the leading epileptic authorities of the land, for, as you know, I have written and spoken on the same theme before. The subject, however, is so important that it can not lose by repetition. In extenuation, I can only say what Oliver Wendell Holmes once said when accused of repeating the same thought in a number of his books and lectures. Referring to our ancient professional brother, Aristotle, he said, "Does any body suppose that when the Stagirite first uttered his famous apothegm, 'Know thyself,' that he then allowed it to sink dormant into the capacious depths of his own breast like a profound secret, or, as if it were a felony, never to be mentioned again? Did he not rather repeat it over and over to his friends, his family, his trades-people, the members of his club, and many times, we may suppose, to his impetuous pupil, Alexander? And in addition to all this, he may even have tried to have had it printed in the afternoon papers.'' (I need hardly make an affidavit as to the accuracy of this quotation since it is made from memory.)

Thus I may say about this subject, The Use and a Few of the Abuses of the Bromids, so often expatiated upon by the profession that even at the risk of being pronounced guilty of vain repetition, we can not afford to forget that there are frequent and grave abuses in the use of the bromids in the therapy of epilepsy, and that we need by repeated warnings to keep them in constant remembrance; otherwise the effect of the drug when carefully administered is usually so beneficial that we are apt to forget that the wrong dose or the wrong way of giving the right dose, too often repeated and too uninterruptedly continued may produce symptoms so undesirable that it would seem as if there were no alternative but its abandonment altogether. This we feel would be a great calamity to the epileptic community and unjustifiable, because the abuse or improper employment of an agent is no argument against its proper use.

A rather common abuse then, in connection with the over-much employment of the bromids, is the production of that difficulty of differentiation on the part, not of the patient, but of the medical attendant, by which we are liable to get symptoms of the disorder confused with conditions caused by the medicine, such as excessive nervous irritability, frontal headache, melancholia, suicidal and homicidal impulses, first pointed out by Eccheveria as being due to the remedy rather than the disease, also conditions simulating dementia from alcoholism, distinguished from the genuine by the fact that the symptoms subside with the disuse of the drug; general paresis, states of depression and collapse, disturbances of circulation, especially where functional failure of the heart forces exists (that form of cardiac weakness called by the writers of a quarter of a century ago ''chronic cardiac asthenia''), now symptoms like these, often due to the drug, may be and are, as we have known, confused to such an extent with the symptoms of the disease itself that it requires trained observation to distinguish one from the other. Indeed, as you know, these varieties of drug intoxication are often looked upon, by the laity at least, as a part of the disease.

The pathologic tapestry, so to speak, thus presented by the over-dosed patient is such a tangled web of incongruous filaments that it requires much experience before we can give to each strand and character its real place and significance.

In some patients also certain paretic symptoms appear under the injudicious use of the bromids, as, for example, that partial paralysis of the third cranial nerve, which manifests itself in ptosis of the upper eyelids, with constant drooping of the lids and inability to raise them without an effort. This rather infrequent concomitant of bromism was first recorded in print by Dr. Mitchell a few years ago. It is, however, also produced by nicotin especially in boys and anemic young men, so that all cases of this coincidental paralysis can not be ascribed to the bromid salts exclusively.

Certain people addicted to the use of tobacco acquire at times what might be called Mongolian lids, with consequent elliptical ocular openings due to the same pathology, giving them that expression of the eyes characteristic of the people of the Orient.

I suppose then, that it is not only the bromids but that any drug disturbing reflex energy might ultimately cause this specific muscular relaxation. Some years ago when bromid of potassium first came into lay-vogue, when it was a popular domestic remedy for the relief of "congestive headache," I saw two cases of ptosis from its irrational use; one so pronounced and distressing, the lids covering the eyes like a portière at the entrance of a room or draperies at a window, so that nothing could be seen until the patient drew them aside with his hands. An operation only resulted in partial relief.

Again, most of us are familiar with that adventitious condition, especially in chlorotic girls, when, under the mistaken use of the bromids for the cure of "hysterical epilepsy," dysmenorrhea disappears and the menses formerly scant become abundant and continuous, caused, probably, by the diminished blood pressure and consequent weakening of the reflex nervous influences emanating from the uterus and ovaries. Now this curious therapeutic effect, excessive menstrual flow, excessive in quantity and continuance, is solely due to the over-use of bromids, and yet I have known a prominent gynecologist to do a curetment for the relief of this condition, that gets well spontaneously if the use of the salts is either diminished or suspended.

There is another abuse, the opposite of the above, that is corroborative, too, of the fact that the drug as a remedy is efficient only in real epilepsy, and not in symptomatic epileptiform attacks due to some other disease, certain varieties of convulsive hysteria, due perhaps to malnutrition of the uterus and its appendages, or some abnormal state of the genitalia occurring in anemic women, when the use of the bromids, although common, is a manifest abuse, as such cases, on the contrary, require the gynecologist rather than the neurologist, and iron instead of bromids that are so likely to interfere with recovery by depressing the processes of assimilation and repair,—the very conditions that require toning up and support. In such cases this drug is not only contraindicated but injurious.

These conditions of nerve disturbance also require painstaking and prolonged scrutiny in order to secure their differentiation from real epilepsy; for, if treated as such, the result is likely to be anything but a benefit, and the diagnosis of this malady is not always the easy thing it is popularly believed to be.

There are so many exceptional effects produced by the bromid salts, they are so interesting and protean in their manifestations, like Shakespeare's Cleopatra, custom can not stale their infinite variety. Yet I think I have alluded to enough to suggest discussion and elicit additional light.

The general restriction of circulation which they invariably cause, emphasized occasionally for some unknown reason at particular foci or places, will account for most of their Harlequin character and general versatility of action.

Such cases as I have cited, and are, as we might say, due to the abuse of the drug, need hardly deter any careful practitioner from their use in his management of epileptics, for there can be no doubt in regard to the utility of the bromids in most cases of true epilepsy. Some cases may be cured by them in connection with other remedies; a very few are unaffected, but most patients may be permanently improved. They are by no means a specific, or even the best remedy in all cases, yet I am convinced that, in connection with digitalis, belladonna, Indian hemp and ferrocyanid of iron, as indicated by the state of the patient, with a more intimate knowledge of the pathology of the disease, with the proper adjustment of the dose to the individual, with carefully selected food, employment and surroundings, we may ultimately find the combination that will produce ideal results, and that in the nicely adjusted application of the above forces there will be found the nearest approach to the long sought for panacea.

DISCUSSION.

Dr. W. P. Sprattling, New York: After more than twenty years' experience in the practice of medicine, during which time more than three thousand epileptics have been under my care, I have no hesitancy in giving it as my unqualified belief that the bromids, *per se*, are powerless to cure a disease in which any medication used should be reconstructive and not destructive.

That the bromids have the power to suppress convulsive phenomena, I do not for a moment doubt; nor do I doubt but what they can do so for an almost indefinite length of time. The great difficulty in the past has been the giving of the bromids irrespective of the type of epilepsy treated or of its cause. We must not forget that there are "epilepsies and epilepsies," many forms, varieties and sub-divisions.

An epilepsy due to a congenitally unstable central nervous system, associated with a highly irritable condition of the cerebral cortex, all in an individual who is active, robust, muscular and strong, may be most beneficial.

In an epileptic patient who is feeble, more or less "thin and nervous," who has too little good red blood, whose skin is sensitive to irritants, and who leads a sedentary life, it is to my mind a very poor, nay, even a very improper treatment. If you are going to give the bromids, give small doses in plenty of water, and do not neglect the skin and bowels. It is not essential that we induce "bromism" to get the beneficial effects of the bromids; it is more essential that we do not do so. Dr. Woods has given us a good paper, and as a final word I want to reassert that we study the case and the cause in the patient at hand, rather than respect an established practice in treatment that has but little to recommend it.

Dr. Thomas C. Fitzsimmons, Wilkes-Barre: I have listened with profound attention to Dr. Woods' paper and feel personally under obligations to him for having pointed out so graphically the pitfalls that may be encountered by the indiscriminate use of the bromids in the treatment of epilepsy.

Dr. Brown-Sequard long ago mentioned, but only in an unspecific way, the possibilities of injury as a result of overdosing with this drug, and our therapeutic standard, the United States Dispensatory, has also drawn attention to the same subject, but it is only when illustrations are, as it were, individualized as in this paper that they become sufficiently prominent as warnings.

We can not afford to abandon the bromids but we can use them with greater caution and notwithstanding what has been said in regard to their occasional peculiar manifestations, yet in the hands of the expert I can conceive of but little if any danger.

One of the dangers is due to the fact that the busy general practitioner with his multifarious demands has not the time at his disposal to attend to these multiplexly deranged patients where each individual has to be studied with the attention demanded by a difficult pathologic, psychic, and physiologic problem, the solution of which frequently defies even the skill of the expert.

At best, the disease is a perplexing one, demanding particular, personal management, and it is only when under such auspices that we can hope for the best results and exemption from the dangers referred to by Dr. Woods.

HEMATURIA DUE TO SMALL DOSES OF UROTROPIN.

BY JOHN G. BEARDSLEY, M.D., L.R.C.P. (ENG.), Philadelphia.

Since the more common use of urotropin as a urinary antiseptic, a fairly large number of cases of hematuria have been reported as due to the continued use of large doses of this drug.

I wish to report three cases in which hematuria developed very soon after the first dose was given and in none of which cases had more than thirty grains of urotropin been given.

Case 1. The patient was a woman of fifty years, suffering from a mild degree of cystitis. Hematuria was found after two doses of five grains each had been taken.

Case 2. Patient, a young man of twenty

years, was convalescing from typhoid fever. Hematuria developed after twenty grains of the drug had been taken in five grain doses.

Case 3. Patient, a man of thirty-five years, developed hematuria after taking twenty-five grains of the drug.

As the hematuria in these cases was discovered by the routine examination of the urine, and as the drug was stopped at once in the first two cases with the result that the hematuria also ceased, while in Case 3 the blood in the urine being thought to be due to the fact that a circumcision had been performed, the drug was continued for twelve hours when decided symptoms of bladder irritation with strangury developed with large quantity of blood in the urine, which symptoms were relieved as soon as the urotropin was discontinued. These cases serve to remind us that it is well to keep a careful watch upon the urine, particularly as to microscopic examination while administering urotropin.

THE HISTORY OF A CASE OF ABDOMINAL PREGNANCY WITH A POSTMORTEM REPORT.

BY BENJAMIN F. MYERS, M. D.,
Chambersburg.

(Read at the Meeting of the Medical Society of Franklin County, October 16, 1906.)

The case I have to report first came under my observation in June, 1906. I received a message to go at once to the southern part of our city to see a woman who was taken sick with great pain. I responded promptly, and, upon my arrival, I found the following case:

Mrs. S., a white woman, lying prostrate upon the floor in the kitchen of her home, was apparently in great agony. I expressed my surprise at her position, and inquired why she did not get upon the couch which was near by. She replied that she could not move for the pain; that any movement on her part greatly increased her suffering. She complained chiefly of pain in her back and iliac regions, and described the pain as being intermittent, similar to labor pains.

Upon further investigation, I found a rapid pulse and uterine hemorrhage, but no elevation of temperature. She appeared to be so very uncomfortable that I desisted making any further inquiry and proceeded to administer a hypodermic of morphin and atropin. This soon relieved her pain, and I departed. The case being rather obscure, I asked my neighbor, Dr. Seibert, to accompany me later in the day to see my patient for further investigation. He kindly consented, and when we reached her, we found her upon the couch and much more comfortable. We endeavored to secure a history of her case, but obtained very little satisfaction. I made a vaginal examination, and as the examining finger came in contact with the womb, the patient winced as if I had touched a boil. In other words she was exceedingly tender. She was still bleeding, but there was no decidua or other evidence of fetal discharge. This examination was not complete nor very satisfactory, and no definite conclusions were arrived at. Dr. Seibert seemed to think that it was a case of threatened abortion. I was doubtful, however, about this being the case, and rather suspected a fibroid tumor.

When I called again the next day, she was in a much better humor to answer my questions and I then learned that she was aged forty-two and was the mother of seven children, all living, the oldest being twenty-three years, and the youngest twelve years old; also, that her husband had been absent for nearly thirteen years, living in Lancaster City. She was still bleeding, and upon inquiry into this condition, she informed me that she had been having hemorrhages at irregular periods for nearly two years. She stated that her menstruation would not appear for several months and then she would have a hemorrhage, similar to what she now had.

Her pulse was much better at this visit and temperature normal. The abdomen was distended and tender. She was especially tender in the iliac regions. By palpation and bimanual examination, I made out what I thought was a tumor of some description, and this, with the history of hemorrhages for nearly two years, strengthened my original impression that there was likely a fibroid in the case. I continued to visit the patient for eight or ten days, and had her take ergotol in compound tincture of gentian three times a day. All bleeding ceased in a few days, and in a short time the patient was able to be up and move about in reasonable comfort, although she was unable to endure much exertion. At this period, I advised her to go to a hospital and be operated upon. In fact, I insisted that it should be done and the sooner the better. (Allow me to say here in parenthesis that this was correct advice, although it proved to be based upon an error.) However, she refused on the ground that she would rather "die of her disease than go to a hospital and die from the operation." I saw the patient at intervals during the summer, and she appeared to be reasonably comfortable, although she was in a state of invalidism.

On August 23, I was called to see her son, and while in the house, I observed Mrs. S. sitting upon a chair, and, from her general contour and the great increase in the size of her abdomen, I was impressed that, after all, perhaps my patient was pregnant and that the tumor was a growing fetus. I confidentially asked her if she did not now think that she was pregnant, insisting that it was for her own good to acknowledge the fact if she thought that was her condition. But she stoutly denied even the possibility of such a thing. I recalled the fact that she had not had a child for twelve years, and credited her story, and again insisted that an operation ought to be done at once, but all to no avail. So I dropped the case for the time being.

On September 27, I was hurriedly summoned to her side. She was suffering great abdominal pain and had been vomiting. Her pulse was extremely rapid, being 140, and thready. This time she complained more of abdominal pain and very much of pain at the pit of the stomach and under the shoulder blade. I injected morphin and atropin which gave her relief but did not remove all the pain. The abdomen was large and tender, and felt more or less solid. There was no bleeding nor any discharge from the vagina. There was no blanching of the face. I left her, but was called again later in the day and found her again in great agony, the suffering being in the same parts in which I had found it in the morning. She was vomiting small quantities of bile. I gave her another hypodermic, left some medicine and gave directions to make hot applications. From this time on I saw the patient twice a day for five days and was compelled to administer a hypodermic of morphin at each visit. The patient continued to vomit, whether from the pain or from the morphin, I am unable to say. The vomit was largely bile and the urine was highly colored with the same. All this time I detected no fever, but the pulse continued very rapid, 140, more or less, all the while. The morphin, of course, kept her bowels tied up, but by giving an enema they were moved rather freely on the fifth day. I might remark here that from the beginning of her illness in June, and during my attendance of her, the patient had no special trouble with her bowels. She did not even suffer with constipation.

On the fifth day, my patient not improving, I asked Dr. Palmer of Chambersburg, to see the case with me with the view of deciding upon the advisability of an immediate operation. He kindly consented to go with me, but the patient being in a very bad condition upon our arrival, in fact, in a state of collapse, an operation appeared to be out of the question and was so advised.

Her condition grew worse from day to day, although I was not compelled to administer any more morphin, as she was in a stupor and made no complaint of pain. For her prostration, I gave her hypodermically, gr. 1-30 strychnin sulphate daily. Her pulse became more steady, and less rapid under this medication, but her stupor was not improved. She took very little nourishment during all this time, only a little coffee, champagne, and some milk in very small quantities. Her stupor increased and on the eighth day of her illness, her suffering was ended by death.

The peculiar symptoms of her last illness, and the mode of death, stirred up considerable doubt in my mind, as to the correctness of my primary impressions of the case. So that I might be able to reveal the true cause of her demise, I asked the privilege of holding an autopsy, and fortunately for us it was granted. I invited Drs. Seibert, Palmer and Greenewalt of Chambersburg to assist me, and observe the conditions that we might reveal. They were all present, together with Dr. Curriden of Boston. Upon viewing the body, we observed the skin to be very much jaundiced, and the abdomen rather prominent. Suspecting that there might be considerable fluid in the abdominal cavity, we assayed to use an aspirator, but obtained very little fluid,—only a small quantity of blood. I made an incision from the umbilicus to the pubes, and upon opening up the cavity, the first thing to present in view was the occiput and back of a baby. Of course, our surprise was great, particularly on account of the size and development of the child. It appeared to be a fetus of about six months, well developed and rounded out. The child was not enveloped in a sac. I made the incision rather slowly and carefully, so that the sac was not ruptured with the knife if it existed, but had ruptured previous to the post-mortem. We observed a fully developed cord, fifteen to eighteen inches in length, and by tracing it to the placenta, found the latter implanted upon the decending colon. I peeled it off from the colon much like one would remove an adherent placenta from the womb, were he to use his hand, and it came away complete. It was a placenta of average weight, although thicker and more compact. Having the child and afterbirth removed, we found very little fluid in the cavity and found a space much like a nest in which the fetus had developed. The bowels did not encroach upon this space after the removal of the fetus, but seemed to be held up by various adhesions. The appearance of all the intestines was unnatural, being covered with inflammatory material.

We further discovered a complete partition between the abdominal and pelvic cavities, composed of false membrane, so that there was absolutely no connection between the pelvic organs and the fetus. Upon rupturing this membrane, there was a gush of bloody fluid into the abdominal cavity. I should say, ten or twelve ounces in quantity. In exploring the pelvic cavity, we found the uterus far down and rather small for that of a multipara,—we might say about the size of a virgin's womb. The ovaries and tubes were in their normal positions, surrounded with some inflammatory material.

In looking this matter up, I notice that Lusk declares that in extrauterine pregnancies the womb, as a rule, enlarges to a certain extent with the fetus. This was not true in our case.

In examining the placenta, I found remnants of a sac which did not envelop the fetus when we opened the abdomen, and, therefore, the rupture of which must have caused the unfortunate woman's suffering and death. But this being true, we find another anomaly in the symptoms of this woman's last illness; namely, the absence of fever. At no time, I am sure, was the temperature more than 100 degrees F. While I did not use the thermometer frequently, there was no time when there was any suspicion of high temperature.

To me one of the wonderful features of this most remarkable case is the perfect development of the fetus with the placenta implanted so far from its natural habitat. What a mysterious force is that inherent in the embryo that would compel the colon to give up blood for its development and maturity! Surely the ways of nature are most confounding!

LIFE INSURANCE EXAMINATION FEES.

(Report presented to the Medical Society of Northampton County, January 19, 1907.)

Your committee appointed to "prepare resolutions on the question of a suitable fee for insurance examinations of 'old line' companies," respectfully submits the following report:—

I. The fee to be asked for an examination for a life insurance company should be determined by the same rules that decide the value of our services to private patients.

It is impossible, consequently, to state any sum as a binding or authoritative fee, since physicians place different prices on the value of their services. It might be remarked in passing, that those physicians who habitually value their services at a lower price than is ordinarily charged by their neighbors, are receiving all that their services are worth with a possibility of being overpaid. All that can be offered in a report of this kind is an estimate of a fair, minimum fee for the self-respecting physician of average standing. Such a man will adhere to a fair fee, regardless of the "cut-rate" fees by others even at the risk of personal financial loss. His dignity as a gentleman, the honor of his profession, the debt he owes to it, and the reward of right living (more valuable and satisfying than any money gain) all demand this. Your committee will not urge the adoption of its conclusions, as a combination to maintain "rates," but their acceptance by each one individually, as far as it appears right to each individual, because it is right, and oblivious of the conclusion of any one else.

II. In determining the value of the services included in a life insurance examination, we must keep in mind:—

1. That an examination which partakes of some of the features of a consultation, commands a relatively higher price than the same examination for the exclusive use of the examiner.

2. That an examination plus a written report with an opinion, is worth more than an

identical examination without a written report, with a verbal opinion to the patient alone.

3. That a physician is justified in charging a larger fee for an examination where he is only to give an opinion than where the examination is to be followed by a series of fees in the course of treatment.

III. Keeping these propositions in mind, let us try to make out a bill of items:—

Should a patient call at the office of any of our number and require, for the proper understanding of his condition, an examination such as is usually included in the routine life examination, few, if any, of us would ask less than one dollar for the service rendered; most of us would ask more. Then, if an urinalysis were required, an additional dollar would be demanded. Should the patient at the start have told you that he was asking for this examination only to learn his physical condition and that he did not purpose to put himself under your professional care, we doubt if many, unless under some stress, would not raise the fee they had proposed to ask by fifty cents or even a dollar more. If, in addition, you were asked to write a full report of your findings, detailing with some minuteness the conditions of the various organs, which report is to be used by Dr. X. to assist him in giving an opinion for which he is to be paid, should you double the amount thought of for a fee, it would not be excessive. Indeed, were your patient ordinarily well to do, most of you, when asked the amount of your fee for performing such service, would quietly say "ten dollars" and the fee be cheerfully paid and thought to be a reasonable one.

IV. If through custom or the result of conference a minimum fee prevails in any region, the only valid reasons for diminishing the amount are that the particular examination in hand (1) requires less skill; (2) takes less time; (3) involves smaller responsibility, or (4) the financial condition of the patient demands a concession.

If none of these elements be present, ordinary decency demands that we maintain the fee. Not that we are bound by any pledge, but, if a man has any conceit of himself, he ought to value his services to be worth as much as those of his neighbor; and, if he has any respect for his profession, he will uphold her dignity and not engage in a custom that is off color even in the commercial world. He will not "cut prices."

V. Certain life insurance companies accepted the idea that five dollars was a proper fee for an examination of an applicant for insurance in their companies. Now they have notified their medical examiners of a reduction in the fee to be paid for a number, probably the majority, of the examinations. We have seen above that five dollars is a very moderate fee for the service rendered. Do the companies reducing their fees claim any of the reasons already quoted as a reason why this reduction should be accepted by the physician? The new examinations will require as much time, exact as much skill, and demand as much responsibility as they formerly did. Their only reason can be the financial one. Is this a valid reason?

VI. Because of abuses in the conduct of life insurance companies, there has been new legislation and the companies are limited in the amount of their expenditures. Because of this legal restriction, the companies ask their medical advisers to reduce their fees. In order that there be no misrepresentation on the part of your committee in the presentation of this claim, we quote from a letter of a president of one of the companies reducing their medical examination fees. It was sent to one of the examiners of the company in defense of the action of the company.

> It appears, from articles which I have seen in certain medical journals and from the action of some medical societies, that the physicians of the country are not aware of the causes which led to the change in the medical fees allowed by the ———— and by other companies. This change has been necessitated by the new legislation, and it seems to me advisable to explain to you the requirements of this law in some detail. The Section to which I refer reads as follows:—
>
> "Section 97. *Limitation of Expenses.* No domestic life insurance corporation shall in any calendar year after the year nineteen hundred and six spend or become liable for or permit any persons, firm or corporation to expend on its behalf or under any agreement with it (1) for commissions on first year's premium, (2) for compensation, not paid by commission, for services in obtaining new insurance exclusive of salaries paid in good faith for agency supervision either at the home office or at branch office, (3) for medical examinations and inspections of proposed risks, and (4) for advances to agents, an amount exceeding in the aggregate the total loadings upon the premiums for the first year of insurance received in said calendar year (calculated on the basis of the American experience table of mortality with interest at the

rate of three and one half per centum per annum) and the present values of the assumed mortality gains for the first five years of insurance on the policies on which the first premium, or installment thereof, has been received during said calendar year, as ascertained by the select and ultimate method of valuation as provided in Section eighty-four of this chapter."

In brief, this Section means that the four items referred to are directly chargeable against new business, and that the companies are not allowed to spend in total for these four items an amount in excess of the actual margin of loadings on the new premiums paid plus the mortality gain. This law will, in any event, necessitate a very great reduction in commissions paid to agents, and I think it will be extremely difficult to retain in our employ many of the men who have been working for us in the past. The agent is the one who will feel most particularly this reduction.

We interrupt the quotation to call your attention to the reasoning employed. Certain abuses crept into the management of the life insurance companies, among others, excessive commissions to agents. The legislature, in its efforts to prevent the recurrence or continuance of these abuses, limits the amount of expenditures. This will reduce the amount of the commissions paid to agents to such a degree that the company fears it will not be able to retain the agents heretofore overpaid. That it may be able to make as small a reduction as possible, it proposes to reduce the fee of the medical examiner, which was not thought to have been too large, thus taxing him to assist in the soliciting of business. It is possible to explain this method of procedure only on the supposition that the doctors, or some of them, are always willing to accept any old thing that may be offered to them. Resuming our quotation:—

In the case of policies of any material size, say $3000 or over, there will be margin enough to provide for the old medical fee of $5.00; but on smaller policies, inasmuch as the medical fee has not under the old schedule borne any relation to the size of the premium collected, there is a very small margin left for the agent after paying the old fee and the cost of inspection.

The following table will explain my meaning.

ORDINARY LIFE.

Age.	Prem.	Loading and Mortality Gain.	Balance for Agent.	Per cent.
25	20.84	15.35	9.35	45%
30	23.72	16.59	10.59	45%
40	32.43	20.62	14.62	45%
		TWENTY-YEAR ENDOWMENT.		
25	49.45	19.40	13.40	27%
30	50.28	20.27	14.27	28%
40	53.46	23.49	17.49	33%

This balance for agent in column four is after paying $5.00 medical fee and the cost of inspection.

You will see from this table (which is only approximate and in which table the possible commission which we will be able to pay the agent is probably in excess of that we can actually pay) that the percentage which a $5.00 medical fee bears to the figures in the column headed "Loading and Mortality Gain" is excessive, and that the change which we have made was really forced upon us by the law; *e. g.*, a medical fee of $5.00 on an ordinary life policy for $1000 would absorb one third of the entire figure which the company under this law is allowed to expend in securing this business. If the same ordinary life policy were for $3000, the loading and mortality gain would be $45.00 and the medical fee still the same; viz, $5.00, or one ninth of the amount allowed to the company for expenditure.

I think if you will examine the underlying principle of this law, and will study the above table, you will see the necessity and the justice of the position we have taken.

We do not wish to discuss the arguments of this letter at length, but since the company of which the writer of the above letter is the president offers a three-dollar fee for an examination when the policy is for $1000, it is fair to infer that it does not consider that the physician is receiving an excessive fee should he be given twenty per cent. of the sum permitted by the law to be expended. Would it not be simple justice (just ordinary business honesty, without any sentiment mingled with it) if the fee is to be graded to the amount of the policy, that when the amount of the policy amounts to $3000, the fee should be in the same ratio, or $9.00, not the $5.00 which the company offers. And, although the figures are kept from us in this letter, if the increase at all corresponds as the amount of the policy increases, what can we say of the princely munificence or reckless extravagance of offering a fee of $7.50 for the examination when the policy is for $15,000?

Neither will it be wise for your committee to enter into a discussion upon the proper amounts to be paid to agents for securing business, since we are not acquainted with all the facts. We will only call your attention to the following: (1) The legislative committee that framed the act was aware of the amount paid for the examinations and thought the sum left after such payment had been made to be ample for the compensation of the agents. (2) The letter clearly shows that the insurance companies dread the loss of agents by the reduction of the fees, although they had been receiving excessive commissions; while they expect the physician to accept mildly anything that may be offered to him. In this they but reason the almost uniform action of the profession for a period indefinitely long in the past, which has resulted in the uniform belittling of the value of the services of the physician when rendered to the public or to corporations.

But, after all, is there any reason in all this for accepting a three-dollar fee? Does not the physician give as much for the $1000 application as for one for $3000 or $10,000? If the agent be required to take an insufficient fee for securing a thousand-dollar application, that will be an incentive to him to secure the issuing of policies for larger amounts. Of the reasons given, justifying the reduction of a fee, we have seen that the only one that applies to the question under discussion is the poverty of the patient,—in this instance the insurance company. Do you think these corporations fit objects on whom to bestow your charity?

Wherefore your committee sees no valid reason for accepting the reduction of the fee.

VII. The discussion, thus far, has related to those companies which have been paying five dollars and now wish to reduce it. There are companies that never paid over three dollars and have found no difficulty in securing examiners. Your committee can see no reason why these companies should not be asked to advance their fees. If our contention is true, that five dollars is less than we would be apt to ask an individual for the same service, we ought to demand this as a minimum fee for any full life insurance examination, and let the company find whom they can if they are not willing to pay it.

We would note that the acceptance of such a fee works harm to the profession at large. Your committee quotes from another letter, this time from a medical director of one of the companies that were forced to show their extravagant expenditures in certain directions, under the skillful questioning of Governor Hughes. It might be remarked, in passing, that the examination did not reveal the amount of the salaries of the medical directors, although the question was asked definitely, nor does a careful search of the records at the Insurance Department at Albany furnish the information.

Your favor of the 18th instant is at hand. I shall have to enter a protest against one statement in it. Judging by the standard which physicians themselves have set, $3.00 is an adequate fee for the service we require. Our former payment, therefore, of $5.00 was an extravagance. Out of 298 insurance organizations in the United States only nineteen have a flat fee of $5.00, of the others eleven have a graduated schedule similar to ours, and the remaining 268 have a flat fee of three dollars or less.

This, remember, is from a medical man, one of those whom rumor saith receives anywhere from $25.00 to $50.00 for each and every hour spent in the office of the company, whose salaries are so large that the officials of the company did not know their amount when the affairs of the company were under official investigation. It is such a one that says the payment of "$5.00 was an extravagance." But, after all, the sting in his letter lies in the fact that physicians are found who will take whatever they get regardless of the true value of the service, and of its effects upon the profession at large. We can not but think that much of this is done through thoughtlessness.

VIII. This report does not touch the various forms of industrial insurance. There are other factors entering into that department of insurance which require a separate consideration, and the introduction of it here would fog the main issue.

We believe that we have stated correctly the principles involved in determining the proper fee to ask for a life insurance examination. We, therefore, recommend the adoption of the following:—

Resolved, That the Medical Society of Northampton County affirms, as an abstract proposition, that five dollars is as small a fee as should be charged for a full, regular examination for a life insurance company.

Resolved, That the physicians in this county be asked to live up to this abstract proposition in their practice, and to decline to make an examination for less. Not because it is a concert of action on the part of the physicians, but because it the right thing to do.

Resolved, That a copy of this report be sent to every physician in the county, with the request that free and candid comments be made upon it, and that the committee be continued to receive and report on these replies.

Resolved, That the necessary expenses for printing, postage and clerical assistance in sending out this report be paid by the society after the bill has been approved upon its presentation in the open meeting of the society.

Charles McIntire.
W. P. Walker.

PROPOSED NATIONAL DEPARTMENT OF HEALTH.

The following is the substance of a memorandum recently sent to President Roosevelt indicating the proposed work of the Committee of One Hundred of the American Association for the Advancement of Science to consider the subject of a National Bureau of Health.

I. *Origin of Movement.* The proposal to establish a National Department or Bureau of Health was made in a letter to President Roosevelt from Professor Irving Fisher of Yale University under date of May 12, 1906. This was followed by a visit to President Roosevelt by Professor Fisher on May 19, 1906. President Roosevelt expressed a desire that such a movement, before he could take any part in it, should first be supported by a real demand on the part of the public.

At Ithaca, on June 30, 1906, Professor J. P. Norton of Yale University read a paper before the Economic Section of the American Association for the Advancement of Science, entitled, "The Economic Advisability of Inaugurating a National Department of Health."

Professor Norton planned his paper without any knowledge that Professor Fisher had interested himself in the same object. It appears that the plan for a National Office of Health has been suggested independently to the minds of a larger number of persons, as a natural consequence of the conditions demanding it. It is definitely advocated by Dr. Hubert Higgins (of Venice) in his "Humaniculture" by Dr. Rockwell, in the *Popular Science Monthly*, and has for some years been advocated by the American Medical Association, the American Public Health Association, and various congressmen and senators.

Professor Norton's paper was discussed by a distinguished body of economists and hygienists, including Dr. Welch, president of the American Association for the Advancement of Science, who attended the sectional meeting for that express purpose. After the discussion it was unanimously voted that the chairman should appoint a committee to keep alive the subject of Professor Norton's paper. This vote resulted in the Committee of One Hundred. As originally constituted, it included fourteen Federal officials engaged in administering the present health work of the government among different executive departments. In January, 1907, Secretary Taft brought up the question in cabinet meeting, as to whether these persons ought to remain on a committee, the purpose of which was to advocate legislation by Congress. As a result, President Roosevelt directed that the fourteen persons mentioned should withdraw from the Committee of One Hundred. Their places were afterwards filled.

On April 18, 1907, the Committee of One Hundred met for organization in New York, and elected the following officers: President, Prof. Irving Fisher; vice-presidents, Miss Jane Adams, Hull House, Chicago; Felix Adler, Pres. Ethical Culture Assoc., New York; Pres. James B. Angell, Pres. Univ. of Mich.; Hon. Joseph H. Choate, formerly Ambassador to England; Pres. Chas. W. Eliot, Pres. Harvard Univ.; Pres. G. Stanley Hall, Pres. Clark Univ.; Hon. Ben B. Lindley, Juvenile Court, Denver; Hon. John D. Long, Ex-Sec. Navy; Ex-Gov. of Mass.; Dr. Wm. H. Welch, Pres. Amer. Assoc. for Advancement of Science; Andrew Carnegie of New York; Archbishop Ireland of Minnesota; secretary, Mr. Champe S. Andrews.

II. *Precedents.* A general review of Federal activity in public health, made by Mr. James W. Garner in the *Yale Review*, August, 1905, shows that these activities have increased enormously. "As far back as 1796, Congress, in consequence of a widespread epidemic of yellow fever that year, passed an act authorizing the President of the United States to direct the revenue officers and the officers commanding forts and revenue cutters to aid in the execution of quarantine and also to aid in the execution of the health laws of the states in such manner as might seem to him to be necessary." A bill for a national quarantine law was rejected.

The Bureau of Animal Industry owes its present form to the acts of March 3, 1891, and March 2, 1895. The present pure food law constitutes the latest important step toward increasing the activity of the national government in health matters. The government has made valuable investigations on health problems and published results in the bulletins of the Department of Agriculture, in the census volumes, etc.

Accompanying this increase in Federal activity has been an increase in the activity of the various states, a full account of which has been given by Dr. Abbott, late secretary of the Board of Health of Massachusetts, in his "Past and Present Condition of Public Hygiene and State Medicine in the United States," published under the Department of Social Economy for the United States Commission to the Paris Exposition of 1900. A national bureau of health would stimulate the local boards and save them labor. There is no need, for instance, of forty state bulletins on how to treat tuberculosis or typhoid.

Foreign precedents can also be cited. Germany has a National Board of Health with a cabinet minister at its head, the Minister für Medicinal Angelegenheiten, and France has a Comité consultatif d'hygiene publique de France.

III. *Reasons for Increasing National Health Regulations.* Those acquainted with the importance of public health measures realize that only a beginning has as yet been made in the activities of the national government. The inadequacy of the old machinery has already made itself apparent in relation to the pure food law, and led to the establishment of a Pure Food Commission.

The reasons for expanding national activity may be reduced to three: (1) In order better to coördinate the existing work scattered among various bureaus in different departments. (2) In order to provide for the natural expansion of the work of these bureaus and the creation of new bureaus. (3) In order to emphasize the fact that national health is the greatest national asset, and one which at present is not sufficiently exploited.

1. *Co-ordination.* At present, one of the most important health bureaus, namely, the Public Health and Marine Hospital Service, is under the Department of the Treasury. Others, such as the Bureau of Animal Industry, the Bureau of Chemistry (pure food), the Bureau of Entomology, and the Office of Agricultural Experiment Stations, are under the Department of Agriculture; another, the Bureau of Vital Statistics, is under the Department of Commerce and Labor. That these (excepting the last) are all more or less out of keeping with the objects of the Departments in which they are placed is well known. There have been repeated suggestions to transfer the Bureau of Public Health and Marine Hospital Service from the Department of the Treasury, with which it has no organic relation. One of the chief reasons recently given for establishing the Pure Food Commission was that the secretary of agriculture found this work out of his ordinary sphere as well as opposed to the interests of many of the food producers, for whom the Department of Agriculture was established. All the health activities of the government should be definitely recognized as work in behalf of the consumer, not the producer. Meat inspection, being a measure of public health and not a measure to develop agriculture, does not seem to have its best place under a Department of Agriculture.

2. *Expansion.* Health problems originally local have recently become national. This applies not only to pure food and other problems which have been already partially dealt with by legislation, but to many as yet untouched. For instance, New York City derives part of its water supply from Connecticut, and its milk supply from at least three states. For want of jurisdiction, it is difficult at present to secure either pure water or pure milk. Again, the Ohio River, being out of the jurisdiction of the states through which it flows, now represents, as a distinguished hygienist has recently said, a thousand miles of typhoid fever. Just as it is only through the action of the Federal government that the people of the United States have become freed from the menace of yellow fever, so we can not expect to become free from typhoid fever and other diseases communicated from place to place, without aid from the national government. Not only do waters pass diseases from one state to another, and commerce take pests, but passengers carry diseases over the railroads. It is well known that local boards of health have made great strides in fighting tuberculosis by placards in local tramways prohibiting spitting. But on the interstate railroads, indiscriminate spitting is still allowed.

A great field for the health work of the Federal government is the establishment of uniform standards of health work as models for local boards to copy. Just as the United States government has established standards of weights and measures, and standards of pure food, it could establish standards of ventilation, sanitation, etc., and exemplify them in the District of Columbia, making Washington a "model city" in health above all else. Model regulations as to the control of milk supply, the establishment of the standard minimum number of bacteria per cubic centimeter allowable, models as to systems and standards of ventilation of factories, regulation of smoke, regulation of tenements, school hygiene, etc. The health officer of New York City has recently called attention to the fact that the pure food law of the U. S. government has made it far easier for the local health administrator to carry on his work efficiently, for it has created the necessary approval in public opinion. In New York City during the last year millions of pounds of diseased or improper foods have been destroyed, more than would have been possible had it not been for the moral effect of the national pure food law.

3. *Health Ideals.* In the formation of health ideals, the moral effect will in the end be the greatest of all the effects of public health measures. New health ideals are already growing fast in the minds of the public. In the work of health research and the distribution of information on health matters,

the Federal government could fill an increasing demand. Scientific knowledge on these matters is at present very far in advance of its practical application. The public is eager to know and utilize scientific discoveries. As yet practical application of these discoveries has been slower in the United States than in some other countries, notably Japan.

A little attention to national health would improve it greatly.

1. Expert investigation has made it extremely probable that man does not usually live the span of life which is physiologically normal.

2. Of this brief life a very large fraction is lost through illness. That this illness is for the most part preventable is now a matter of common knowledge among medical men, and constitutes the *raison d'etre* for the National Association for the Study and Prevention of Tuberculosis, the Society for Sanitary and Moral Prophylaxis, the American Public Health Association, the American Public Health Defense League, etc.

3. Even when the ordinary man calls himself well, his physical and mental working powers are far below the point to which they could easily be cultivated. This has been shown by experience and experiment. In one experiment on healthy students, physical endurance was doubled in less than six months by the application of simple hygienic rules. There is enormous room for improvement in physique and vitality. This can be done as readily and effectively as the arid lands of the West have been reclaimed by irrigation.

Not only are the resources of hygiene as yet largely unexploited, but many of the most competent observers believe that there is a real racial degeneration going on, a "race suicide" of the worst kind. A parliamentary investigation was made on this subject in England recently, precipitated by the observation that the candidates for recruits for the army and navy were growing shorter year by year. An inter-departmental committee was appointed by the British Parliament (1) to determine steps that should be taken to furnish the government data for an accurate comparative estimate of the health and physique of the people; (2) to indicate generally the causes of such physical deterioration as exists in certain classes, and (3) to point out the means by which it can be most effectively diminished. The committee returned a report recommending a permanent advisory council (in substance, a national department of health) along with fifty-two other constructive measures.

The same question exists in America. It is true that the average duration of life in the United States is increasing, but this is due to the prolongation of infant lives. The statistics show that the mortality for adult years and for adult chronic diseases except tuberculosis is increasing with alarming rapidity.

The elevation of health ideals would not only improve the physique, but it would help solve many of our greatest public problems. In fact, these questions at bottom are largely questions of health. The tenement house question is one of sanitation, ventilation and light. The problems of clean streets, sewers, regulation of atmospheric vitiation by smoke, gas, etc., are health problems; so also is the regulation of child labor, woman labor, sweat shop labor; the questions of alcoholism and the cigarette habit among boys, and the sale of cocain and other drugs to minors. These evils are also associated with poverty, crime and divorce. Disease, poverty and crime constitute a vicious circle and mutually aggravate each other.

The evils of limitation of children of well-to-do families, tending toward the race suicide deplored by President Roosevelt, are due to the lack of proper life-ideals. The tendency is well known in France, and probably had much to do with the decline and fall of Rome. The evil is due to the displacement of the simpler health ideal of life by the economic or plutocratic ideal. The only possible cure is a reverse change in life-ideals, toward a simpler normal life. This alone can save us from racial degeneration. Such ideals can come only by systematic inculcation in the growing generation during the formative period. When the love of a robust race, capable of strenuous activity, has become as national as the love of the flag, the question of degeneration will solve itself. The best results ever attained in physique have been obtained through *esprit du corps*. It is not the selfish valetudinarian, but the college athlete, filled with a patriotic devotion to his college, who gets the most out of his physical training. That this same *esprit du corps* can apply nationally has been proved by various historical examples,—Sparta, Rome, Japan. The drunken Russian soldiers could not compete with the Japanese with their system of physical training and sanitation.

Lack of application of the modern prophylaxis was largely responsible for our high death rate in the Spanish-American war. In most wars during the last century, the ratio of deaths from disease to deaths in battle has averaged about four to one; in the Spanish-American war the ratio was fourteen to one, The mortality among the Japanese in the recent war with Russia showed a ratio of disease to battle mortality of one to four,—one sixteenth of the general average for wars, and one fifty-sixth of that of the United States in the Spanish-American war. This fifty-fold superiority of the Japanese was not due to any superiority in medical knowledge, but to the better application of that knowledge. Undoubtedly there were special causes operating in the Spanish war to make the mortality from disease high and the mortality in battle low, but there is little difference of opinion among experts, on the proposition that the mortality from disease would have been reduced several fold had there existed the requisite national machinery for conserving the health of the soldiers.

As yet almost nothing has been done by the Committee of One Hundred to influence public opinion. In view of this fact it is interesting to observe that a number of medical and hygienic associations and their respective journals have heartily supported the proposal,—such as the Lake Placid Conference on Home Economics, the Public Health Association of the United States, Canada and Mexico, the American Health Defense League, the Annual Conference of the Committee on Medical Legislation and the National Legislative Council of the A. M. A., and the great American Medical Association itself.

PRESIDENT ROOSEVELT'S LETTER OF ENDORSEMENT.

The White House, Washington.
May 8, 1907.

My Dear Sir:—

I have examined the memorandum which you left with me in regard to the plans of the Committee of One Hundred. I congratulate the Committee on the progress made in this movement since I talked with you a year ago.

Our national health is physically our greatest national asset. To prevent any possible deterioration of the American stock should be a national ambition. We can not too strongly insist on the necessity of proper ideals for the family, for simple living and for those habits and tastes which produce vigor and make men capable of strenuous service to their country. The preservation of national vigor should be a matter of patriotism.

For this reason, and because many of the problems of public health are interstate in their character, the aid of the Federal government is necessary to supplement the work of state and local boards of health. Federal activity in these matters has already developed greatly, until it now includes quarantine, meat inspection, pure food administration and Federal investigation of the conditions of child labor. It is my own hope that these important activities may be still further developed.

While I could not in advance commit myself to the approval of any specific form of legislation, I can most cordially commend the endeavors of your Committee to bring these matters prominently before the public.

Yours very truly,
THEODORE ROOSEVELT.

Professor Irving Fisher,
President of the Commitee of One Hundred,
The New Willard,
Washington, D. C.

THE UNCONSCIOUS VALUE OF CAREFUL CLINICAL EXAMINATION OF PATIENTS.

Louis Faugeres Bishop, New York City, emphasizes the fact that the careful clinical examination of a patient, carried on while the judgment is suspended, gives the opportunity for the subconscious development of a valuable judgment. This is entirely lost when the investigation is curtailed in time or details, and when the premature judgment is allowed to be formed. Therefore it is most important that in every case in which we seriously undertake the treatment, to make a very complete investigation into the history, the physical signs, and the laboratory findings, and, only after collecting these, to form judgments as to the best course of treatment for that particular patient. The physician who is to give the opinion should, as far as possible, keep his mind free from conclusions until his final opinion is given upon the case. It is the subconscious mental activity that produces those results that are considered so valuable in all professional work. —*American Medicine*, December 30, 1905.

HIS CHANGE.

"You certainly look better; you must have followed my advice and had a change."

"Yes, doctor, so I have."

"Where did you go?"

"I went to another physician."

The Pennsylvania Medical Journal.

PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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All communications should be addressed to the Pennsylvania Medical Journal, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

ATHENS, JUNE, 1907.

Let the other man do contract work, and he, instead of you, will live to regret it.

THE ATLANTIC CITY A. M. A. MEETING.

The Atlantic City meeting of the A. M. A. has become history and the city by the sea has again demonstrated its unexcelled ability to take care of a large concourse of people. In many respects Atlantic City is an ideal place for large gatherings, the hotels are grouped along the famous board walk with its many attractions so that there is an entire absence of those things which tend to divert and scatter "the crowd."

From a scientific point of view the fifty-eighth meeting ranks well with any of its predecessors and in some respects outstrips them. This is not a time of epoch-making events, for medicine is slowly, but surely and steadily advancing in all its branches, so that it is impossible to point to any one great event during the last year, and at the same time it is impossible to turn in any direction without seeing in letters, so large, that "he who runs may read" the word Progress.

Physicians as a rule are not noted for their proclivities for attending church yet there perhaps never was a time when so many doctors flocked to church so frequently and remained so long as at Atlantic City, for no less than three of the sections held their meetings in churches.

We naturally ask ourselves after such a meeting, what have we carried away with us? The amount of good to be gotten out of such a meeting depends very largely upon ourselves, and the mere fact that we may not be able to weigh and measure it does not lessen its importance. It was rather interesting to look over the audiences in the various sections and see the young and old mingled together. It is wise to cultivate the habit of attending these meetings, for after all we are creatures of habit, and it is best to begin early. The young man should make a special effort to be present, he thus becomes familiar with the leaders in our profession and at the same time he gets a certain amount of self confidence, for age is not always an indication of wisdom, and even the recognized leaders do not know it all. Thus are we impressed with our human limitations and inspired to more active and vigorous work. Those who find it impossible to attend these meetings should read with care all the papers as they appear in the *Journal of the A. M. A.*, and if not already members should become so at once and thus assist one of the greatest if not *the* greatest and most progressive medical organizations in the world. H.

HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION.

The Medical Society of the State of Pennsylvania was represented at the recent meeting of the House of Delegates of the American Medical Association, held in Atlantic City, by the eight delegates to which we are entitled. Two of the sections were also represented by Pennsylvania physicians. Of this number, one was placed at the head of the reference committee on amendments to constitution and by-laws, and another was assigned to the reference committee on medical education.

The deliberations of the House were presided over by Drs. William J. Mayo and Joseph D. Bryant in an unbiased and businesslike manner, so that the matters brought before that body were carefully considered and disposed of at sessions held on Monday, Tuesday and Thursday, allowing the delegates Wednesday and Friday for section work.

Probably the most important items of business were presented in the Report of the Trustees, the Report of the Council on Medical Education, the Report of the Bureau of Medical Legislation and the Report of the Committee to Formulate a Plan for Public Instruction.

The Report of the Trustees was as complete as possible and was supplemented by a request from the trustees for such questions as the members of the House might desire to ask. The questions submitted to the representative of the board were so fully and fairly answered that any tendency to criticize that might have existed was disarmed, and the House unanimously passed a vote of confidence in, and commendation for, the Board of Trustees.

The Report of the Council on Medical Education was thoroughly considered by the reference committee and reported back to the House in such form that the studies and suggestions of the council were approved as recommended by the reference committee.

The Bureau of Medical Legislation has been conducting a great work for the association. Its report, together with the action of the House, should be read by all members. It is evident that all of us have duties to the state which may be most effectively performed by following the lead of the Bureau of Medical Legislation.

A committee on public instruction was constituted. The personnel of the committee gives assurance that this delicate but important work will be successfully carried on under the auspices of the association. The Medical Society of the State of Pennsylvania is to be congratulated upon the part its members have taken and are to take in this department.

The minutes of the House should be studied by the members of the association.

It will be seen that the American Medical Association is worthy of our loyalty.

The following officers were elected for the ensuing year: President, Herbert L. Burrell, Boston; general secretary, George H. Simmons, Chicago; treasurer, Frank Billings, Chicago. The next meeting will be in Chicago. C.

THE PHYSICIAN'S FINANCIAL COMPENSATION.

Special attention is directed to the report of the May meeting of the Bucks County Medical Society which will be found under its proper heading in this number. Every member of the state society should read the entire report.

The country or village physician who charges less than one dollar for an ordinary call, or less than ten dollars for an ordinary obstetric case, does both himself and his patient a decided injustice. In this connection it is desired to submit a suitable preface for any medical fee bill. It was, so far as the writer knows, first used by the Medical Society of the City and County of Lancaster, and is as follows:—

> To enable physicians to exhibit uniformity in the rate of charging, it is proposed that no entry shall be made on their account books of lower fees than those contained in the following table. If in any case, however, the physician should have reason to believe that his patient can not pay the full amount without serious inconvenience, a deduction may be made at the moment of rendering the bill, or at any other time. But the fee bill, as at present established by the society, being founded on a just consideration of the important services which its members are called upon to perform, it is a duty to conform to it in their charges whenever the circumstances of their patients are not such as to clearly forbid it.

The writer would wish to be the last one to say or write anything tending to increase commercialism in the profession or any condition that would prove oppressive or neglectful of the poor, but attention should be called to the fact that no other profession, trade or calling receives so little compensation as does ours when consideration is given to the amount of personal discomfort, responsibility, and capital invested. In justice to our patients as well as to ourselves and to our families we should charge an adequate fee and render a bill as promptly as circumstances will permit. Long standing accounts lead to misunderstanding and loss. The physician who receives six dollars for making six calls in one day does better work and deserves and receives more credit and honor than when he makes eight calls for the same amount or ten calls for a trifle more. The physician who charges less than a fair fee, or who fails to render his accounts promptly, wrongs all parties concerned. S.

THE BACTERIOLOGY OF INFLUENZA.

The diagnosis of influenza is one of the most difficult in clinical medicine. This is due to the fact that the symptoms are so diverse and relatively so undistinctive, many of them attending also other disorders that prevail at the same time. The bacteriology is a little equivocal to say the least, characteristic bacilli not being invariably found in cases of influenza, while apparently the same organisms are not rarely present in association with other affections. From the diagnostic standpoint influenza may be compared in another sphere to hysteria, both being more or less discriminatingly used as labels for disorders that do not readily fall under other classifications.

In a paper dealing with the bacteriology of the respiratory tract, especially with reference to the presence of influenza bacilli, Dr. David J. Davis (*Journal of the American Medical Association*, May 11, 1907, p. 1563) reports the results of a study of the expectoration and also of other secretions in various forms of infectious disease and also in healthy persons. He found influenza-like bacilli in the sputum in 61 of 68 cases of whooping cough at some time in the course of the disease,—often as soon as the whoop began, or even slightly before, and again not until after the paroxysms had set in. Similar bacteria were present early also in 13 of 23 cases of measles, and in four of these they were the predominating organism. Influenza-like bacilli were isolated at various stages in 7 of 11 cases of varicella attended with cough. They were present in the nose in one of three cases of meningitis; in the sputum in 5 of 12 cases of bronchitis; in only 3 of 17 typical cases of influenza; and in 2 of 20 normal throats.

Various organisms were found in the aural discharge in cases in which otitis media developed as a complication, streptococci being the most common and influenza bacilli being occasionally present.

The *Micrococcus catarrhalis* was found to be a common inhabitant of the respiratory mucous membrane in the presence of infectious disorders, and in some cases it existed almost in pure culture. It did not, however, appear to cause specific lesions.

The influenza-like bacillus from cases of whooping cough was shown to be pathogenic for man, although there is some doubt as to its specificity. For the present it must be considered a secondary invader in the various diseases in association with which it is found. At the same time the possibility of a primary invasion should be recognized.

Influenza-like bacilli were readily taken up in the test tube by unwashed leukocytes. This spontaneous phagocytosis was not affected by varying the concentration of the salt solution between 0.6 and 1.4 per cent.

Injection of influenza-like bacilli into animals caused the development of specific agglutinins and probably also an increase in opsonins in the serum. Because of the occurrence of spontaneous phagocytosis and agglutination in such sera, the determination of the opsonic index for these bacilli is rendered unreliable.

It will accordingly be seen that not much aid is to be expected from bacteriological examinations in the diagnosis of influenza. E.

EIGHTEENTH CENSORIAL DISTRICT MEETING.

The first district meeting of the Eighteenth Censorial District was held in the high school auditorium at Scranton, April 25. There were afternoon and evening sessions, with an attendance of about two hundred. The meeting was called to order at 2 P. M. by the chairman, Dr. F. F. Arndt, who delivered a short address of welcome. The first paper was by Dr. J. I. Roe, president of the Luzerne County Medical Society, on "Arteriosclerosis." This was discussed by Drs. C. H. Miner, W. G. Weaver, and L. B. Woodcock. Dr. Robert T. Morris of New York followed with an address on "Harmful Involution of the Appendix," which was discussed by Drs. W. G. Fulton, A. W. Smith, Reed Burns, and closed by Dr. Morris.

Next was a symposium on Tuberculosis in which the following papers were presented: "Tubercular Adenitis in Children" by Dr. John H. Jopson, Philadelphia; "Some Surgical Aspects of Tuberculosis" by Dr. John B. Roberts, Philadelphia; "Early Diagnosis of Tuberculosis" by Dr. James J. Walsh, New York; "The Cause and Prevention of Tuberculosis" by Dr. L. M. Gates, Scranton. Owing to the length of the program, these papers were but briefly discussed by Drs. Guthrie and Fell.

At the evening session Dr. Charles Long of Muhlenberg presented a paper on "Existing Relations between Country Practitioners and Medical Societies," which was discussed by Dr. Arthur J. Simons of Wayne County. Dr. Charles E. Wagner of Binghamton next gave "Some Phases of Newer Psychiatry," and was followed by Dr. L. H. Taylor on "Medical Libraries." Dr. D. A. Capwell of Scranton closed with "The Business Side of the Profession."

Drs. Walsh, Wainwright, Van Sickle, and Niles took part in the discussion of these papers.

Between the sessions the visitors were given an automobile ride and entertained by the Scranton doctors at the Scranton Club, where they had dinner.

This was considered a very successful meeting for the first attempt. The one disappointment to the censors of Lackawanna, Luzerne and Wayne counties was that they failed to arouse any interest among the Carbon County physicians, who also belong to this district. E. H. B.

THE SEPTEMBER MEETING AT READING.

The committee on scientific work and also the committee on arrangements have matters well under way for the Reading meeting. The program will be an exceptionally good one, and the prospects are that the attendance will be large. Dr. F. W. Frankhauser, chairman of the committee on arrangements, and Dr. John F. Feick, chairman of the committee on hotels, give assurance that the Reading hotels are abundantly able to entertain all who may attend. S.

GOVERNMENT DOES NOT GUARANTEE PURITY OF FOOD.

Warning has been given the public that the government does not guarantee the purity of food products sold by manufacturers. The guaranty which is used so extensively in advertisements is given by the manufacturer to the government and not by the government to the consumer. The serial number given by the department is simply a reference number and in no sense a guarantee. The acknowledgement from the department is worded as follows: "Your guarantee as to character of the materials manufactured and sold by you, given in accordance with Circular 21 of this office, has been received, found to be in proper form and is regularly filed. The serial number attached thereto is No.——" The Board of Food and Drug Inspection of the Agricultural Department, of which Prof. Wiley is the head, has warned the violators of the law that action will be taken by the department to stop the abuse. S.

QUACK MEDICINE ASSOCIATION.

Few physicians, much less the laity, realize the power and influence exerted upon newspapers and upon legislators by the capital invested in the making and selling of quack medicines. We clip from the *Journal of the American Medical Association* for June 8, the following:—

> The Independent Medical Association is the latest. It includes the advertising specialists whose medical advertisements have been eliminated from the New York newspapers through the efforts of the New York County Medical Society. The members of this association state that their object is the "protection and preservation of their inalienable right to the freedom of the press." It is further stated that "to defray expenses which would be incurred by fighting such legislation, membership dues are fixed at $10 per year." The last statement is noteworthy. If membership in such an association, organized for such purposes, is considered worth $10 a year to the members, how much ought membership to be worth in his county, state and national association, with all that it means and brings to the honorable and ethical physician?

Physicians should refuse to subscribe for any paper, religious, political, literary or medical, that inserts advertisements, the use of which will be harmful to the morals and to the health of the community. Otherwise they become partners in the questionable transactions. S.

ANTIVACCINATION BILL VETOED.

Governor Stuart on June 10, vetoed the Watson bill, suspending the operations of the compulsory vaccination law in communities where smallpox is "not known to exist." The language of the bill is indefinite, in the opinion of the Governor, in that no attempt is made "to indicate in what way the disease shall be known to exist or to whom it shall be known to exist in order to make it the duty of school authorities to require said certification." The Governor thinks that "in view of the fact that vaccination is a preventive measure, it would probably afford but little protection in any locality to enforce the requirements relative to the said certificates only after smallpox is known to exist therein." S.

Changes in Membership of County Societies.

The following new names have been reported from May 4 to June 1: James F. Allen, Louis H. Hector, Allegheny; Joseph W. Beyer, Aspinwall; W. P. Barndollar, Senior Bloomberg, C. H. Furnee, Pittsburg; J. S. Cadwallader, Wexford; John S. Kelso, Avalon; C. W. Schaeffer, Carrick; John W. Dixon, Wilkinsburg; C. N. Schafer, Mt. Oliver; John Adam Wenrich, Wernersville; William S. Glenn, State College; Melvin J. Locke, Bellefonte; John H. Lloyd, Leonard; Jacob Kimber Levan, Berwick; George Black Hopwood, Eben Russell Ingraham, Uniontown; Charles William Utts, Leisenring; Alvin D. Dalbey, McConnellsburg; U. Grant Anderson, Mark L. Bailey, F. Fraley Price, Carbondale; George B. Beach, John Decker Butzner, Fred M. Davenport, John P. Donohoe, John Szlupas, Joseph Villone, Joseph A. Wagner, Scranton; Albericus Molinari, Wilkes-Barre; William W. Richardson, George M. Settle, Norristown; George A. Weida, Frederick; Charles R. Wylie, Pottstown; Genevieve Neil Klase, Danville; William Henry Glick, South Bethlehem; Jacob A. Fraunfelder, Nazareth; H. A. Lakin, New Germantown; Mary Louise Dixon Bickings, William W. Cadbury, Alexander R. Craig, Ignatius L. J. Fitzpatrick, Samuel Friedenberg, Cyrus W. Fridy, Edward H. Goodman, Louis B. Heimer, Harry B. Knapp, Elmer B. Kyle, Francis A. Mantz, George P. Pilling, Jr., Mahlon R. Raby, Jacobina Reddie, John J. Repp, John M. Slaymaker, Alice Weld Tallant, Francis W. White, George C. Yeager, Tello J. Apery, Albert F. Gaeton, John Leedom, Arthur McGinnis, Walter M. Miller, George W. Stimson, Benjamin A. Thomas, Philadelphia; Philip L. Hatch, Coudersport; Franklin Pierce Farwell, Galeton; George A. Noon, Listie; Clifford Cooper, Cooperstown; John F. Miller, Oil City; William W. Mills, Polk; William W. Shaffer, Utica; John L. McCullough, Washington; Henry Joseph McClellan, Callicoon, (N. Y.); William F. Ross, New Kensington; Samuel S. Wright, United.

Frederick S. Birchard, Montrose, has been transferred from the Lackawanna County to the Susquehanna County Society.

George W. Smith (Univ. of Pennsylvania, '63) died at his home in Hollidaysburg, April 22, from cerebral hemorrhage, aged 72.

John H. Packard (Univ. of Pennsylvania, '53) of Philadelphia, died in Atlantic City, May 20, aged 75.

Eugene Wiley (Jefferson Med. Coll., '69) died at his home in Philadelphia, May 17, aged 62.

David S. Grim, Ross B. Rowe, and Harry D. Stryker of Reading are no longer members of Berks County Society.

Robert Morrison has removed to 5 South Harwood Ave., Sheridanville.

Samuel A. Sturm has removed to 2602 North 17th St., Philadelphia.

J. P. McFarlane has removed to Starford.

G. Frank Dandois has removed to Altoona.

R. Bruce Tule has removed to Milton.

Present membership 4813. S.

State News Items.

MARRIED.

Dr. James M. Nealon and Miss Margaret Roan, both of Plymouth, April 18.

Dr. Arthur J. Zimlick and Miss Daisy Davisson, both of Philadelphia, June 5.

Dr. Stewart N. Pool and Miss Mary Crawford Armstrong, both of Pittsburg, June 6.

Dr. Everett Pusey Barnard and Miss Eliza Harman Bosler, both of Philadelphia, May 10.

DIED.

Dr. Benjamin Nice (Jefferson Med. Coll., '77) in Hamburg, June 6, from paralysis, aged 52.

Dr. Charles A. Dusinberre (Coll. of Phys. & Surg., New York, '49) in Honesdale, May 12, aged 83.

Dr. Willard Greenfield (Years of Practice, Penn.) in Erie, February 26, after a long illness, aged 80.

Dr. Samuel L. Dally (Years of Practice, Penn.) in Oakdale, May 2, from cerebral hemorrhage, aged 73.

Dr. James O. H. Banks (Hahnemann Med. Coll., '73), April 29, from cancer of the rectum, aged 78.

Dr. Joseph A. McKee (Jefferson Med. Coll., '96) in Petersburg, January 25, from pleuropneumonia, aged 38.

Dr. William F. Detwiler (Univ. of Pennsylvania, '49) in Hellertown, June 8, aged 83.

Dr. John Paxon (Univ. of Pennsylvania, '69) at his home in Newtown, June 3, of apoplexy, aged 66.

Dr. Daniel L. Hetrick (Years of Practice, Penn., '69) in Pleasantville, May 4, from heart disease, aged 62.

Dr. Robert Wilkie Martin (Homeopathic Med. Coll. of Pennsylvania, '65) in Philadelphia, April 11, aged 65.

Dr. John H. Wengert (Coll. of Phys. & Surg., Baltimore, '79) in Windber, May 12, from heart disease, aged 49.

Dr. George F. Arney (Jefferson Med. Coll., '87) of Altoona, May 3, in Philadelphia, after an illness of two years, aged 54.

Dr. Gustave Schoenberg (Univ. of Berlin, Germany, '48) in Philadelphia, April 19, after an illness of seven years, aged 81.

Dr. Emory W. Blackburn (Eclectic Medical Institute, Cincinnati, '85) in Latrobe, April 4, from septicemia, due to a carbuncle.

Dr. Robert Orr Crist (Univ. of Maryland, School of Medicine, '03) in Boswell, May 6, from hemorrhage following tonsillitis, aged 29.

Dr. William Barnard Graves (Coll. of Phys. & Surg., Baltimore, '01) in Dubois, May 10, from typhoid fever following pneumonia, aged 33.

ITEMS.

Mr. John Wyeth, of John Wyeth and Brother, died last month of pneumonia.

Dr. Benjamin M. Bartilson, Braddock, is recovering from an operation for appendicitis.

Dr. DeForest Willard, Philadelphia, has returned from the South with renewed health and has resumed professional work.

Dr. Mazyck P. Ravenel will address the International Congress on Tuberculosis in Berlin on The Etiology of Tuberculosis.

Tonsillitis from a Loving Cup. More than twenty students at Bryn Mawr College contracted tonsillitis, drinking from a loving cup.

Dr. S. Weir Mitchell received the honorary degree of LL.D. from the University of Toronto.

Dr. James M. Anders delivered the address to the medical students at the commencement of the Medico-Chirurgical College, May 31.

Dr. J. A. Lichty, Pittsburg, was elected vice-president of the American Gastroenterological Association, at its tenth annual meeting in Atlantic City, June 3 and 4.

Typhoid Fever at Bechtelsville. There is an epidemic of typhoid fever in the vicinity of Bechtelsville, near Reading. Thus far three deaths have been reported.

Spotted Fever in Pittsburg. During the months of March and April, eleven deaths occurred in Pittsburg from cerebrospinal meningitis. Several other cases have been reported.

Drs. P. Y. Eisenberg, Norristown, and J. W. Houston, Lancaster, were elected vice-presidents of the National Association of U. S. Pension Examiners, at the sixth annual meeting in Washington on May 8.

The Philadelphia Medical Colleges and Hospitals gave special clinics on the Friday and Saturday previous to, and the Monday and Tuesday following, the Atlantic City meeting, as a courtesy to visiting physicians.

Dr. Theodore H. Weisenburg, Philadelphia, has been elected neurologist to the Philadelphia Hospital and consultant to the Insane Department, also professor of neuropathology and assistant professor of neurology in the Medico-Chirurgical College.

The North Penn Clinical Society held an interesting meeting at Lansdale, May 6. This society proposes to cover the territory along the railroad from Lansdale to Bethlehem. The next meeting will be at Souderton.

The Medical Club of Philadelphia tendered a reception on June 7, to Drs. Joseph D. Bryant, Isaac C. Gable, Alexander Marcy, Jr., and John W. Clifton, presidents of the American Medical Association, and the Pennsylvania, New Jersey and Delaware State Medical Societies.

New Dispensary for Philadelphia Polyclinic. Plans are being made for the erection of a two-story brick and granite dispensary building for the Polyclinic Hospital. The new building will be eighty by eighty feet in size, and will contain many rooms and laboratories.

The Pennsylvania Hospital, 8th and Spruce Sts., Philadelphia, is financially embarrassed and needs assistance. There is proper reason why this hospital does not receive aid from the state but there is no reason why it should not receive donations from those able to grant the same.

Reviews.

SAUNDERS' POCKET MEDICAL FORMULARY. With an appendix. By William M. Powell, M. D. Eighth edition, thoroughly revised, enlarged and adapted to the eighth revision of the United States Pharmacopeia. W. B. Saunders Company, Philadelphia.

This book is gotten up with alphabetic indents and interleaving for additional personal formula. The fact that it has gone to the eighth edition shows that many physicians find it useful. L. F. P.

THE AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. Newman Dorland, M. D. Fifth revised edition. 32mo of 574 pages. Philadelphia: W. B. Saunders Company, 1906. Flexible Morocco, gold edges, $1.00 net; thumb indexed, $1.25 net.

This handy little volume contains some thirty thousand medical terms with brief but clear and adequate definitions, and a considerable amount of matter in tabular form. The vocabulary is well selected and up to date. S.

A PRACTICIAN'S HAND-BOOK OF MATERIA MEDICA AND THERAPEUTICS, Based upon Established Physiologic Actions and the Indications in Small Doses. By Thomas S. Blair, M. D. 253 pages, bound in limp library cloth. Price, $2.00, net. Published by The Medical Council, 4105 Walnut Street, Philadelphia.

The author is a graduate of the Medical Department of the University of Michigan, and is a member of the Dauphin County Medical Society. He is a believer in scientific medication and is ready to learn where and how he may. This work is the result of personal study, investigation and tests in practice of the medicinal agents prepared by the pharmacists of the different schools and methods of manufacture. He shows the methods of obtaining the medicinal qualities of the various plant drugs, and expresses the opinion that while the general manufacturing pharmacists as a rule furnish reliable preparations, the eclectic and the homeopathic manufacturers prepare certain drugs better than other houses. He points out the reasons why the sectarian preparations are stronger, purer or more uniform than other preparations. S.

INTRODUCTION TO MATERIA MEDICA AND PHARMACOLOGY, INCLUDING THE ELEMENTS OF MEDICAL PHARMACY, PRESCRIPTION WRITING, MEDICAL LATIN, TOXICOLOGY, AND METHODS OF LOCAL TREATMENT. By Oliver T. Osborne, M. A., M. D., Professor of Materia Medica, Therapeutics and Clinical Medicine in Yale University. Lea Brothers and Co., Philadelphia, 1906.

This is an excellent little book of 167 pages. One of its best features is its ethical nature. It is full of information of vital importance in the administration of remedies and on the other subjects of which it treats. Were physicians in general better acquainted with the truths contained in this work, they would produce better results with their remedies, and likewise would be less inclined to resort to proprietary remedies. K.

SURGICAL DIAGNOSIS. By Daniel N. Eisendrath, M. D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons). Octavo of 775 pages, with 482 original illustrations, 15 in colors. Philadelphia: W. B. Saunders Company, 1907. Cloth, $6.50 net; half morocco, $8.00 net.

The demands on the general practitioner to-day are such that he must be able to make a surgical diagnosis at an early period for the purpose of instituting prompt surgical intervention. The author, in recognition of this and to make the diagnosis of these lesions as easy as possible, has so planned the contents of his book that the consideration of these conditions are grouped according to the region involved. Thus, in the chapter on injuries of the head, the various traumatic lesions of the scalp, skull and the brain are considered together. This same principle is applied throughout the volume.

The methods of examination are fully described in the text in detail, aided by photographic illustrations, diagrams and radiographs of the affected parts. All the surgical lesions and injuries of the body are considered except those of the eye, ear, nose and throat. The author's wide experience in dealing with operative surgery and his eminence as a teacher have specially fitted him for the task he has so ably accomplished.

The book is well printed, profusely illustrated, and is a valuable addition to surgical literature. A. R. A.

ATLAS AND TEXT-BOOK OF HUMAN ANATOMY.—Volume II. By Professor J. Sobotta of Würzburg. Edited, with editions, by J. Playfair McMurrich, A. M., Ph.D., Professor of Anatomy at the University of Michigan. 194 pages, 214 illustrations, mostly in colors. Philadelphia: W. B. Saunders Company.

The first volume of this work was devoted to bones, ligaments, joints and muscles. This second volume, covering the "viscera, including the heart," is probably the most beautiful and practical volume of anatomical plates and descriptive text ever published.

Under the heading of Splanchnology the author includes: (1) The digestive apparatus; (2) the respiratory apparatus; and (3) the urigenital apparatus. These subdivisions are clearly described and fully illustrated. Angiology is treated under the principal headings of general angiology, special angiology, and the blood-vascular system.

The author has a style that is pleasant to read and easy to understand, the lithographic plates and illustrations in black-and-white and in color are clear and accurate, and the index is very complete. L. F. P.

A MANUAL OF THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF THE EYE. By Edward Jackson, M. D., Professor of Ophthalmology in the University of Colorado. Second revised edition. 12mo of 615 pages, with 182 text-illustrations and 2 colored plates. Philadelphia: W. B. Saunders Company, 1907. Cloth, $2.50 net.

From the preface to the first edition it is learned that "this book is intended to meet the needs of the general practitioner of medicine and the beginner in ophthalmology." Few specialists are better fitted for writing such a book than is the author, who is thoroughly systematic and scientific in all his work and at the same time practical in his methods, treatment and operations. His thoroughness is shown by the fact that more than half of the text is devoted to what might, in general terms, be called examination and diagnosis. Nothing is omitted,—patient's history, inspection, vision, refraction, ophthalmoscopy, etc., etc. Still everything is brief and concise, unless it be the ten pages of well selected and classified bibliography for the use of those wishing more extended information.

The local and medical treatment recommended is simple and conservative, and the common ophthalmic operations are clearly described and well illustrated. Every practitioner and specialist should have this book in his library. S.

THE HARVEY LECTURES. Delivered under the auspices of the Harvey Society of New York, 1905-6. 8vo, cloth, pp. 337. J. B. Lippincott Co., Philadelphia, 1906.

The Harvey Society was organized in 1905, the avowed object being the diffusion of the medical sciences by means of public lectures, dealing with what is generally considered the purely experimental side of medicine. This volume contains The Theory of Narcosis by Prof. Hans Myer; Modern Problems of Metabolism by Prof. Carl von Noorden; Trypanosomes by Prof. Frederick G. Novy; Autolysis by Dr. P. A. Levene; Serum Therapy by Prof. William H. Park; The Neurons by Prof. Lewellys F. Barker; Fatigue by Prof. Frederic S. Lee; Formation of Uric Acid by Prof. L. B. Mendel; Power to Regenerate in Man and Vertebrates by Prof. T. H. Morgan; Nature and Cause of Old Age by Prof. Charles H. Minot; Modern Views of Placentation by Prof. J. Clarence Webster; Some Phases of Tuberculosis by Prof. Theobald Smith; and The Cause of Heart Beat by Prof. W. H. Howell. L. F. P.

WILLIAMS ON FOOD. Food and Diet in Health and Disease. A Manual for Practitioners of Medicine, Students, Nurses and the Lay Reader. By Robert F. Williams, Professor of Principles and Practice of Medicine in the Medical College of Virginia, Richmond. 392 pages. Cloth, net, $2.00. Lea Brothers & Co., Philadelphia, 1906.

In Part I. the needs of the body for different kinds of foods and the manner in which they are utilized are explained. The principles of cooking foods and detailed descriptions of the different articles of food in common use are given, with chapters on the proper nutriment of infants, children, adults, and the aged.

Part II. deals with the variations from the normal diet in health, necessitated by the more common diseases, and includes a chapter on general methods to be observed in feeding the sick, as well as the special directions for nourishment in diseases of different kinds.

The importance of a work of this kind, which is simple enough for a child to read and yet absolutely trustworthy and based upon the scientific achievements of accepted leading authorities, is obvious. Such books are in line with the best principles of hygiene and make for the betterment of the present as well as future generations. L. F. P.

A TREATISE ON THE MOTOR APPARATUS OF THE EYES. Embracing an Exposition of the Anomalies of the Ocular Adjustments and Their Treatment, with the Anatomy and Physiology of the Muscles and Their Accessories. By George T. Stevens, M. D., Ph.D. Illustrated with 184 engravings, some in colors. 496 pages. F. A. Davis Company, Philadelphia.

This work begins with exhaustive but interesting and instructive historical notes of strabismus and other anomalies of the eye muscles. The central doctrine of the book is the same as that announced in the author's Functional Nervous Diseases in 1884, "difficulties of adjustments of the eyes are a source of nervous trouble and more frequently than other conditions constitute a neuropathic tendency." The anatomy concerned is thoroughly and accurately given. The physiology is fully treated, filling one hundred and seven pages. The study of the orbital planes and axes are of general interest to scientists as well as to physicians. The larger part of the work is devoted to anomalous conditions. The work is very comprehensive and decidedly original. The illustrations are numerous and mostly original, those in comparative anatomy being of especial interest. The neurologist and every one making a study of the eye, whether general scientist or ophthalmologist, should study this book, though they may not accept all of the author's pathological conclusions. S.

MODERN SURGERY. General and Operative. By J. Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College, Philadelphia. Fifth revised edition, enlarged and reset. Octavo volume of 1283 pages, and 872 illustrations, some in colors. Philadelphia: W. B. Saunders Company, 1907. Cloth, $5.50 net; half morocco, $7.00 net.

Five editions and eleven reprints of these editions are sufficient to attest the merit of this work. It also indicates the opinion held by the profession of its value. The fifth edition has been carefully revised, different sections have been enlarged and much new matter has been added, bringing the contents strictly abreast with the latest advances in surgical literature.

Among the sections enlarged and altered are those on hernia, ulcer of the stomach, cancer of the stomach, ulcer of the duodenum, suture of the spinal cord, Bier's method of congestive hyperemia, and perforation of the bowel in typhoid fever.

The new matter added includes fracture of the carpal scaphoid bone, operation for ununited fracture of the femoral neck, Murphy's operation for ankylosis, operation for brachial birth-palsy, Cushing's operation for intracranial hemorrhage of the newborn, the author's operation for movable kidney, Monk's method of identifying the different sections of the small intestines, Willy Meyer's radical operation for removal of cancer of the breast, Young's prostatectomy, Mayo's gastrojejunostomy, interilio-abdominal amputation, Murphy's treatment for septic peritonitis, etc.

A number of new cuts to illustrate the alterations and the additions to the text have been inserted. With these alterations and additions the work will continue to be a necessity to the student and a valuable acquisition to the doctor's library. A. R. A.

GENITOURINARY DISEASES AND SYPHILIS. By Henry H. Morton, M. D., Clinical Professor of Genitourinary Diseases in the Long Island College Hospital; Genitourinary Surgeon to Long Island and Kings County Hospitals, and the Polhemus Memorial Clinic. Illustrated with 158 halftone and photo-engravings and 7 full-page colored plates. Second edition, revised and enlarged. Royal octavo, 500 pages. Bound in extra cloth. Price, $4.00 net. F. A. Davis Company, Publishers, Philadelphia.

Dr. Morton's work treats its various subjects in a clear and concise manner. By the use of headings and heavy type the important points are emphasized. The text is well illustrated by many plates, a number of which are original.

The work is up to date as regards instruments and remedies used in the various diseases described.

Gonorrhea, acute and chronic, its complications and sequelæ, are well handled. The relation of chronic seminal vesiculitis to sexual neurasthenia is ably demonstrated. The section devoted to syphilis, while not exhaustive, is written in a clear-cut, descriptive manner. The chapters on diseases of the prostate are very good.

In the appendix appears a list of instruments necessary for office use and all the best methods now used for examining discharges and staining specimens. J. E. E.

ANNALS OF SURGERY, A Monthly Review of Surgical Science and Practice. Edited by Lewis Stephen Pilcher, M. D., LL.D., with the collaboration of J. William White, Ph.D., M. D., Sir William Macewen, M. D., LL.D., and W. Watson Cheyne, C. B., F. R. S. J. B. Lippincott Co., Publishers, Philadelphia. $5.00 per year. SPECIAL JUNE NUMBER, $1.00.

The Annals of Surgery is noted for excellence of its contents, but the superiority of the fifteen original papers, many of them illustrated, appearing in this special June number deserves particular mention.

Dr. J. Collins Warren's paper on the "Plastic Resection of the Mammary Gland" is a very able and timely one, well illustrated with seven plates that give the different steps of the operation.

Dr. William J. Mayo writes on the "Contributions of Surgery to a Better Understanding of Gastric and Duodenal Ulcer." In this article he takes into consideration the ulcers of the stomach and duodenum and divides them into two classes. First, the surgical or indurated ulcer; second, the nonindurated mucous ulcer, which he believes at the present to be nonsurgical. The location, frequency and the relation of the indurated ulcer to cancer is fully reviewed. Two illustrations accompany this paper.

Dr. John C. Munro tabulates 150 benign stomach lesions that have been followed from operation to the present time in his paper on the "End Results in Benign Lesions of the Stomach Surgically Treated.

The paper dealing with "Remote or Indirect Subperitoneal Drainage in the Closure of Persistent Fecal Fistulæ," by Dr. Robert J. Coffey, is very interesting. It describes his method of closure and the illustrations, six plates in colors, show the different stages in the operation.

"Lipoma of the Intestines in a Child Thirteen Months Old, and Causing Symptoms of Intestinal Obstruction," by Dr. George Chandler, as well as Dr. Max W. Myer's article on a "Malignant Type of Pseudomyxoma Peritonei Penetrating the Spleen and Colon" are papers that will bear close reading.

"Primary Typhilitis without Appendicitis" is a paper by Dr. Clarence A. McWilliams in which he quotes a number of cases that apparently show the difference claimed by the author.

"Tuberculosis of the Testicle," written by Dr. Edward L. Keyes, is a masterly effort, and is based upon the histories of 100 patients and 153 tubercular testicles.

"Toxic Nephritis Dependent upon Surgical Conditions," by Dr. Nathan Jacobson, is a brief review of operative cases causing this condition.

"The Adequacy of Local Anesthesia in Inguinal Hernia Operations," by Dr. John A. Bodine, "Cysts of the Suprarenal Gland," by Dr. Andrew McCosh, "The Diagnosis of Obscure Cases of Renal and Ureteral Calculus," by Dr. Alfred T. Osgood, "Fracture-Dislocations," by Dr. W. W. Keen, and "Partial Gastrectomy," by Dr. Charles Frazier, with the transactions of the New York Surgical Society and the Philadelphia Academy of Surgery complete the number.

The editor and the publishers are to be congratulated on the appearance and contents of this special number. A. R. A.

PREVALENT DISEASES OF THE EYE. A Reference Handbook, Especially Adapted to the Needs of the General Practitioner and the Medical Student. By Samuel Theobald, M. D., Clinical Professor of Ophthalmology and Otology in the Johns Hopkins University; Ophthalmic and Aural Surgeon to the Johns Hopkins Hospital and to the Baltimore Eye, Ear and Throat Charity Hospital; Consulting Ophthalmic and Aural Surgeon to the Home for Incurables and to the South Baltimore Eye, Ear and Throat Charity Hospital. With two hundred and nineteen illustrations and ten colored plates. Philadelphia: W. B. Saunders Co. Price, cloth, $4.50; half morocco, $5.50.

This work clearly sets forth what is needed to enable the general practitioner to recognize the many eye maladies that come within his province and gives definite treatment for such diseases so that he may not unnecessarily send patients "to the distant specialist, nor, on the other hand, lose precious time, and thus permit sight to become irreparably damaged, through attempting to cope with maladies which urgently demand the skill of the trained ophthalmologist." The author thinks that the correction of errors or refraction will be well done and the ophthalmoscope successfully used only by the trained specialist and, therefore, these subjects are not described. The author has taken much pains in the matter of general diagnosis and in the treatment of the simpler diseases of the eye. The chapters on the eyelids, conjunctiva, cornea, iris, and glaucoma are specially to be commended. The illustrations are good and well selected. L. F. P.

NEW BOOKS.

The Care of the Baby. By J. P. Crozer Griffith, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Fourth revised edition. 12mo of 455 pages, illustrated. Philadelphia: W. B. Saunders Company, 1907. Cloth, $1.50 net.

Diagnostics of Diseases of Children. By LeGrand Kerr, M. D., Professor of Diseases of Children at the Brooklyn Postgraduate Medical School. Octavo of 542 pages, illustrated. Philadelphia: W. B. Saunders Company, 1907. Cloth, $5.00 net; half morocco, $6.50 net.

A Manual of Personal Hygiene: Proper Living upon a Physiologic Basis. By Eminent Specialists. Edited by Walter L. Pyle, M. D., Assistant Surgeon to the Wills Eye Hospital, Philadelphia. Third revised edition. 12mo of 451 pages, illustrated. Philadelphia: W. B. Saunders Company, 1907. Cloth, $1.50 net.

Chemical Pathology: Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M. D., Assistant Professor of Pathology in the University of Chicago and in Rush Medical College, Chicago. Octavo of 549 pages. Philadelphia: W. B. Saunders Company, 1907. Cloth, $3.25 net.

Atlas and Epitome of Diseases of Children. By Dr. R. Hecker and Dr. J. Trumpp of Munich. Edited, with additions, by Isaac A. Abt, M. D., Assistant Professor of the Diseases of Children in Rush Medical College, in affiliation with the University of Chicago. With 48 colored plates, 147 black and white illustrations, and 453 pages of text. Philadelphia: W. B. Saunders Company, 1907. Cloth, $5.00 net.

Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

State Meeting, Wednesday, May 1, 1907, the President, Dr. James Tyson, in the Chair.

Complete Excision of the Tongue by Kocher's Latest Method; with Exhibition of Patient. Dr. William L. Rodman pointed out the dangers in this operation, among which were hemorrhage, pneumonia, sepsis, and shock, saying that naturally the older surgeons had been more especially concerned about hemorrhage and the aspiration of the blood into the larynx during operative procedures. Important as is the element of hemorrhage the chief danger was said to be from pneumonia.

The simplest method of operation upon the tongue was said to be through the mouth and that could be practiced unless there was extensive disease. The disadvantage of the method introduced by Whitehead was that it did not give access to the entire tongue. It was, however, a perfectly satisfactory method if the growth were situated upon the tip. The next step in advance of this method was said to be the operation, introduced by Kocher, of removing the tongue through the neck. The danger of infection of the wound, however, was a very real one and this method had been abandoned by Kocher. The operation advocated by Kocher to-day was said to be new only in a few particulars; instead of splitting the jaw in the middle line it was divided to one side, thus allowing the patient to swallow and lessening the danger of aspiration pneumonia. Whitehead was given credit for having inveighed against preliminary tracheotomy formerly practiced by Kocher. The steps of the operation were described and the after treatment outlined. The importance of the after treatment was emphasized and the mortality of the operation said to be not more than five or ten per cent. according to the condition of the patient, extent of operation, and skill of the operator. The patient should be fed either by stomach tube after the operation or preferably by the rectum, and the next day he should be made to swallow albumin or plain water to prevent aspiration of fluids into the larynx. There was only slight loss of blood in the operation and Dr. Rodman's patient was about the hospital and able to swallow water and milk the following day.

Dr. John B. Roberts thought the patient a rather young looking man to have carcinoma of the tongue.

Dr. Henry R. Wharton thought the method of Kocher for removal of the tongue seemed to be preferable to others in the opportunity afforded to control hemorrhage.

Dr. Richard H. Harte spoke of the advantage of the use of the thermocautery in dealing with the condition.

Dr. Rodman in closing referred to the age of the patient, saying he thought patients with carcinoma of the tongue were apt to be somewhat younger than those with carcinoma in other parts of the body. He had seen four cases in which the patients were under forty years of age. It was thought by the patient that the condition was caused by irritation by a jagged tooth.

THE AMERICAN ACADEMY OF MEDICINE.

The thirty-second annual meeting of the American Academy of Medicine was called to order by the president, Dr. Casey A. Wood, Chicago, at 11 o'clock, Saturday, June 1, 1907, in the Sun Parlor of Hotel Dennis, Atlantic City, N. J.

The reports submitted during the executive session showed the affairs to be healthful. The first paper was a report by a committee on academic degrees, but in reality a discussion of some of our present day problems involving the corelation of the academic and medical courses in our American colleges. The report suggested the attempt to secure a conference of the various parties interested, to see if some effective plan could not be formulated. The recommendation was adopted.

At the afternoon session, Dr. Leartus Connor of Detroit presented a strong plea for associated effort, in his paper on "The Communal Life of Physicians; Its Cultivation and Value."

After defining the "Communal Life of Physicians" the writer outlined methods for its cultivation and presented estimates of its value under five heads; viz, (1) The individual physician; (2) physicians as a unit; (3) physicians outside communal life; (4) the laity; (5) medical science and art. Thus is shown that individual growth, professional development, and medical triumphs await a clearer perception and unswerving obedience to the obligations of the communal life of physicians.

Dr. Woods Hutchinson, now of the Borough of Manhattan, presented one of his brilliant papers on "The Superiority of the Playground to the Schoolroom." Dr. Hutchinson, as frequently, was iconoclastic, but his iconoclasm, as usual, was thought producing and helpful. The overburdened schoolboy or girl of today had an eloquent pleader for lessening the burden in an argument out of the usual lines. The playground is not only a place for recreation from the fatigue of study, but a positive factor in education, in many instances superior to the schoolroom method.

Dr. A. L. Benedict of Buffalo read a paper on "The Social Education of the Child," pleading for this as a part of the normal development.

Dr. James A. Spalding of Portland, Me., advanced the argument that defectives should be insurable, more especially by accident insurance companies, against those mishaps not rendered more imminent by their defect.

The concluding paper of the afternoon was read by Dr. J. W. Grosvenor of Buffalo in favor of total abstinence from alcoholic beverages by the soldier.

The president's address was delivered at the evening session, and Dr. Casey A. Wood of Chicago, in a delightful paper, made a strong plea for recreative pursuits upon the part of physicians. The medical career is not only not hampered but actually helped by the intellectual life.

The entire session of Monday morning was given to the discussion of the topic, "The Relation of the Medical Profession to the Housing of the People." It was opened by two set papers, one by Dr. S. A. Knopf, the other by Dr. Gertrude U. Light, both of New York City; and the discussion which followed was general, sprightly, and helpful.

After luncheon, another symposium was considered on "The Relation of the Medical Profession to Legislation." Dr. T. H. Shastid of Marion, Ill., claimed that much of our crude legislation on medical topics is due to the character of instruction in medical jurisprudence in our American law schools.

Dr. Henry Beates, Jr., of Philadelphia, presented the question of "State Boards of Medical Examiners"; Prof. J. Pease Norton of Yale, by invitation, presented a paper showing "The Necessity of Coöperation to Secure a National Department of Health"; and Dr.

Henry W. Cattell of Philadelphia read a paper on "Criminal Abortion." After the papers were read an excellent general discussion followed.

The final paper of the session was one of rare interest and value on "The Medical Superstition of the Precious Stones," by Dr. Roland G. Curtin of Philadelphia. Dr. Curtin remarked that he had been getting the material for thirty years, which shows the interest and value of the paper to all who know Dr. Curtin.

The academy concluded its meeting with a social session on Monday evening in the dining room of the Dennis. The committee in charge were sensible in limiting the post-prandial program to a few numbers; fortunate in the variety of the speakers, and, with a chorus by all of Auld Lang Syne, Good Night Ladies, and three cheers for the A. A. M., the meeting closed.

The academy honored itself and Pennsylvania by electing Dr. T. D. Davis of Pittsburg, president for the ensuing year.

AMERICAN ASSOCIATION OF MEDICAL EXAMINERS.

The American Association of Medical Examiners held its eighth annual meeting at the Hotel Chalfonte, Atlantic City, N. J., on June 3 and 4, 1907. This association is composed of physicians who are medical directors of life and accident insurance companies and also of physicians who examine for different insurance companies. The membership is scattered throughout the United States and has been growing very rapidly the past few years. The association holds annual meetings, and the object is to have read and discussed practical papers on subjects which concern the medical director and examiner, and this, of course, limits the discussion to the diagnosis and prognosis of accidents and diseases in reference to life, accident and health insurance.

The meeting just held is considered the most important one the association has had for some years, not only in point of attendance, which included a number of medical directors of prominent life and accident insurance companies, but also in the variety and character of the papers presented. Two especially valuable papers were read; one by Frederick L. Hoffman, Esq., statistician, of Newark, N. J., and the other by Dr. Frank C. Hammond of Philadelphia. Both papers were statistical studies in reference to certain conditions concerning life insurance. The one by Mr. Hoffman considered the twelve diseases which show the greatest percentage of mortality, while the paper by Dr. Hammond was a study of "Diseases of the Female Pelvic Organs in Relation to Life Insurance."

Important recommendations for the purpose of assisting physicians in improving their reports when being made to accident insurance companies and also when following these examinations it becomes necessary to testify in court as an expert witness, were treated by Dr. Kingman B. Page of New York and George H. Bruce, Esq., of the same city. These papers brought out an exceptionally valuable discussion pertaining to this part of insurance work. The association held a symposium on the "Chest Organs in Life Insurance," and papers by the following prominent men were read and discussed:—Drs. Clarence L. Wheaton, Chicago; S. A. Knopf, New York; T. Millman, Toronto; and T. D. Crothers, Hartford.

The question as to the amount of compensation which should be allowed by life insurance companies for the medical examination of each applicant was considered and, as heretofore, the association unanimously went on record as being opposed to any reduction, the members present considering that five dollars was a sufficiently small fee for the examination of any applicant for life insurance, irrespective of the amount of the policy.

A resolution was presented and adopted, in which the association recorded itself in favor of the establishment of a portfolio of health by the Federal government, with a physician as secretary, and ranking in authority with other members of the President's official family.

It was decided to hold the next annual meeting at Chicago at a time to be determined upon later. The following officers were elected to serve for the ensuing year: President, C. H. Harbaugh, Philadelphia; vice-presidents, Liston H. Montgomery, Chicago; Frank E. Allard, Boston; B. J. O'Connor, Louisville, Ky.; E. O. Kinne, Syracuse, N. Y.; T. Millman, Toronto, Canada; and secretary and treasurer, John Guy Monihan, New York.

The membership of the American Medical Association, May 1, 1907, was 27,515, a net gain of 3879 members during the year then ending.

Transactions of the Allegheny County Medical Society.

SYMPOSIUM ON MILK.

THE PRODUCTION AND DISTRIBUTION OF COWS' MILK.

BY WILLIAM R. COPELAND,
Sanitary Engineer, Pittsburg.

(Read before the Allegheny County Medical Society, March 19, 1907.)

Dr. Litchfield has asked me to give a short address to you to-night on one of the phases of the milk question. In view of the fact that a number of your members have discussed the question of the public milk supply from the various points of view of the pathologist, health officials, etc., it occurred to me that you might be interested to learn some of the facts connected with the production of milk on the farm and its distribution to the consumer.

We are all familiar with the fact that the bulk of the milk consumed in the city is derived from cows, but we sometimes fail to appreciate the many factors which have combined to produce the condition of any particular sample of milk with which we may come in contact.

There are more than twenty-five so-called "pure breeds" of cows on the farms in the country and, in addition, all practical farmers have a considerable number of what are called "graded" cows. Such cows carry the blood of several species in their veins.

As a general proposition, a farmer's herd may be divided into three groups, about as follows: (1) Cows which yield a milk small in quantity but rich in cream or so-called "butter fat." (2) Cows which yield a considerable volume of milk containing a little more fat than the law requires. (3) Cows which yield a large volume of milk containing a little less fat than the law allows.

Jerseys, Guernseys, Ayrshires, and Dutch cattle are generally considered to give milk which contains the largest quantities of cream. "Graded cows," Short Horns, Durhams, etc., give a milk that is fairly rich in cream. And Holsteins yield a large volume of milk which contains less fat than the law requires.

Tests conducted for many years show that the total solids and milk sugar do not vary much in the product of different species of cows, but the percentage of cream, or so-called "butter fat," does. This is brought out in the Table 1.

TABLE 1.

No. of Cow.	Breed.	Percentage of Butter Fat.
1	Jersey	4.97.
2	Ayrshire.	4.04.
3	Holstein.	3.30.

The quantity of fat varies in the milk which individual cows give at different times during the year. This fact is illustrated by the figures given in the Table 2.

Other factors tend to affect the quantity of fat as shown in the analyses of samples taken from individual cows. (See Table 3.)

These figures are given in order to show why it is that farmers, and dairymen in general, do what is called "mixing milk." They desire to furnish to customers a grade which shall have a fairly uniform amount of cream. This fact has an important bearing upon the subject of the bacterial contents of the public milk supply as is shown in the Tables 4 and 5, taken from an article by Dr. William H. Park, which he printed in the *New York University Bulletin*.

TABLE 4.

NUMBER OF BACTERIA IN ONE CUBIC CENTIMETER OF MILK.

	After Milking.		
No. of Cow	5 hrs.	24 hrs.	48 hrs.
1	500.	700.	12500.
2	700.	700.	29400.
3	19900.	5200.	24200.
4	400.	200.	8600.
5	900.	1600.	12700.
6	13600.	3200.	19500.
Average No.	6000.	1933.	17816.

The figures given in Table 4 represent samples collected from a barn where "every reasonable means were taken to insure cleanliness,"

TABLE 2.

PERCENTAGE OF BUTTER FAT FOUND IN THE MILK. AVERAGED BY MONTHS.

No. of Cow.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.	4.7	4.6	4.4	4.7	4.9	5.2	5.2	4.9	5.5	6.9	6.2	5.8
2.	3.0	2.8	2.8	2.9	2.9	3.2	3.3	3.7	4.9	3.6		3.3

TABLE 3.

VARIATIONS IN THE QUANTITY OF FAT WHEN COWS ARE IN HEAT.

Time.	Cow No. 62.	Cow No. 67.
First day of heat, morning.	2.1 per cent.	2.0 per cent.
First day of heat, afternoon.	4.9 per cent.	4.3 per cent.
Second day of heat, morning.	3.2 per cent.	5.0 per cent.
Second day of heat, afternoon.	3.6 per cent.	4.4 per cent.

SUMMARY OF BUTTER FAT IN SAMPLES REPRESENTING DIFFERENT PORTIONS OF A SINGLE MILKING.

	Per Cent. of Fat in Milk.				
	Cow No. 6.	Cow No. 10.	Cow No. 14.	Cow No. 15.	Cow No. 20.
First half of milking.	1.63.	2.30.	3.01.	3.61.	2.71.
Second half of milking.	3.33.	4.37.	4.03.	5.19.	4.26.
First third of milking.	1.31.	1.83.	2.89.	3.22.	2.44.
Last third of milking.	3.81.	4.80.	4.28.	5.48.	4.40.
First fifth of milking.	0.97.	1.44.	2.68.	2.74.	2.14.
Last fifth of milking.	4.85.	5.28.	4.57.	5.72.	4.47.
First bottle of milking.	0.60.	0.20.	1.60.	1.50.	0.80.
Last bottle of milking.	7.20.	6.60.	5.80.	6.80.	7.80.

TABLE 7.

AVERAGE RATING FOR THE YEAR 1905.

Condition of the Milk from Individual Dairies.	Average Number of Bacteria per Cubic Centimeter.
"Certified." Every possible care is taken.	9350.
"Not certified." First class in every respect.	9600.
"Clean as well as rich."	13000.
"Not kept in first class condition."	63000.
"Uniformly low grade."	190000.
"Poorest milk and poor facilities."	270000.

The question of the number of bacteria in milk is affected to a very large extent by the conditions under which the milk is drawn. For instance some barns are kept clean, well aired, and the cows' udders and the milkmen's hands and clothes are cleaned before milking. In other barns such precautions are observed less rigidly; and in some barns no effort is made to exercise care. For the sake of illustration I take the figures in Table 5 given by Dr. Park.

TABLE 5.

AVERAGE NUMBER OF BACTERIA PER CUBIC CENTIMETER.

Condition in Barn.	Soon after Milking.	24 hrs. after Milking.	48 hrs. after Milking.
Clean barn. Udders cleaned. Milk cooled one hour after milking.	6000.	1933.	17816.
Dusty barn. Udders brushed. Milk cooled two hours after milking.	15500.	21666.	57333.
Dirty barns—cold weather. Udders dirty. Milk cooled two hours after milking.	16650.	31000.	210000.
Dirty barns—hot weather. Udders dirty. Milk cooled two hours after milking.	30366.	48000.	680000.

It is noticeable oftentimes that when samples of milk are allowed to stand, sediment composed of hairs, manure, etc., collects upon the bottom of the container.

In commenting upon the effect of "cleanliness in milking" Mr. W. J. Fraser of the Agricultural Experiment Station, University of Illinois, states; "Sixty trials were made at different seasons of the year with udders, before and after washing. With udders apparently clean, three and onehalf times as much dirt fell from the unwashed as from the washed udders; with soiled udders,—twenty-two times as much dirt fell from the unwashed udders; with muddy udders,—ninety-four times as much dirt fell from the unwashed udders."

TABLE 6.

DIRECT RATIO BETWEEN THE SEDIMENT IN BOTTLE AND BACTERIA.

Average Sediment in Bottle.	Average Number of Bacteria per Cubic Centimeter.
None to very slight.	23000.
Very slight to slight.	35000.
Slight to considerable.	103000.
Considerable to much.	148000.
Much to very much.	270000.

Mr. Charles H. Wells, health officer of Montclair, N. J., calls attention to the relation which exists between such dirt and the number of bacteria in the samples of milk as given in Table 6.

Mr. Wells has undertaken to make a canvass of all the dairies which supply Montclair and he gives some interesting figures in regard to the bacterial content of various milks. (See Table 7.)

Other sources of bacteria in milk are "fore" milk, milk left in udders, temperature.

CIVIC CONSIDERATION.

BY JOHN C. FETTERMAN,
Professor of Biology, Western University of Pennsylvania, Pittsburg.

(Read before the Allegheny County Medical Society, March 19, 1907.)

The milk problem is one that is receiving considerable attention in all parts of the country. More especially is this true in the large cities where such great quantities of milk are required that it is necessary to have it shipped from distant points. In Greater Pittsburg 40,000 gallons of milk are consumed daily. This supply is furnished by about 2500 dairies, the greater number of which are located in western Pennsylvania and eastern Ohio. It is certainly very important to learn whether this vast quantity of milk is properly handled from the time it is drawn until consumed. The importance of such inquiry is more obvious when we consider but for a moment the perishable nature of the product, due to the fact that it furnishes ideal conditions for the development of various microörganisms.

We know that other cities are giving the milk problem the closest scrutiny, especially during recent years. This close examination into conditions has in some cases resulted in the enactment of special laws which provide for the systematic inspection of the many dairies engaged in the production of the city supply. As the result of such legislation, the consumer may feel quite confident that the milk which he receives is clean and wholesome. No special laws have been enacted by the city of Pittsburg for the purpose of regulating the handling of the vast bulk of milk sold. The state laws provide, to a certain extent, for the handling of milk, but unfortunately do not provide for the systematic inspection of dairies. Attention might also be called to the fact that, while the laws in force at the present time provide for the chemical examination of the milk sold in Pittsburg by the various dealers, they do not provide for the bacteriological examination.

The impression exists among the majority of people that, should the chemical analysis of milk prove it to be of normal constitution, it is all that could be desired, thus losing sight of the fact that the same milk may be of inferior quality because of changes due to the presence of bacteria. It is a well-known fact that before considering a certain water supply perfectly safe the bacteriological as well as the chemical analysis must be made. It is just as important that the bacteriological examination of the city milk supply be made, since we know that certain pathogenic bacteria are likely to occur in milk that is carelessly handled. The bacteriological examination will also reveal the number of organisms present. This is of the greatest importance since the relative number of bacteria indicates the amount of care exercised in handling the product.

In connection with the examination of the milk sold in Allegheny and Pittsburg, during the months of March, April, May, and June, 1906, it was observed that the amount of butter fat present in milk ranged from three to five per cent. The state law requires a minimum of three per cent. The occurrence of less than three per cent. butter fat is usually due to skimming or adulteration by the use of water. The bacteriological examination conducted during the same period revealed that bacteria occur in numbers ranging from 7000 to 5,000,000 per cubic centimeter. This great variation in the number of bacteria may be assigned almost entirely to the great differences in the handling of the milk from the time of its production to the time of its consumption.

A study of the conditions that prevail in New York City reveals the fact that the people of that city consume in milk alone an average of five hundred pounds of dirt per day. This unwholesome material could, to a great extent, be eliminated were the very obvious and simple precaution of straining the milk immediately after the milking observed. Unlike many foods the bulk of the milk consumed finds its way into the system in the raw state. It is in this condition then that it should be investigated. The question now arises, how do the bacteria find their way into the milk and how can they be prevented from doing so? In a paper of this length it would be impossible to dwell upon or even to enumerate all of the many ways in which the milk supply may become contaminated. But it will probably suffice to mention a few. After examining a number of dairies one can not but be impressed by the fact that, in spite of the great progress that has been made in our knowledge of bacteria, and especially in their relation to milk and its products, the average dairyman handles the milk with such an utter lack of intelligence. In many cases, the barns in which the cows are housed are very old, the walls are laden with dust, thus affording the greatest opportunity for the lodging and the development of various kinds of bacteria which, at the slightest movement or jar, may be and are dislodged, and, thus scattered abroad, find their way in great numbers into the milk. Sometimes the floor is of clay saturated with filth, a condition of affairs that is largely responsible for the occurrence of tainted milk. At milking time, the cattle are driven to the barn and in some cases may be compelled to wade through mire up to their knees. They are fed usually before the milking is begun, and because of this, vast numbers of bacteria are permitted to float about and settle on the milking utensils. While the bacteria which may gain access to the milk in this manner may not belong to the pathogenic group, they are responsible for the bitter flavor characteristic of some milk.

The cow herself is another source of contamination since the dust and hairs which drop from the body contain myriads of organisms. Many bacteria are likely to gain access from the clothing of the milker being dusted into the pail at each movement of the hand in milking. If the milk is strained in the stable and allowed to remain there for any length of time, it is certain to have a strong odor and an objectionable flavor. Quite frequently, it is some time before the milk is cooled and during the interim the bacteria are multiplying at a great rate. The statements just made, apply to conditions as observed in carelessly conducted dairies, many such being found in the vicinity. While such milk is eventually cooled before being shipped to the city dealer, it is by that time in such condition that it can not be considered wholesome. But fortunately for the general public, there are, on the other hand, dairymen who take great pride in the manner in which their dairies are conducted. They whitewash their barns at regular intervals; they keep the manure pile at a safe distance from the dairy; and the feeding is done after milking. The milk, as soon as drawn, is carried to the milk house and passed through a cooler of such construction that it is quickly cooled from blood heat to about forty degrees centigrade, in this manner preventing the development of bacteria. The cows are kept perfectly clean by careful grooming; all pools and puddles where cattle are likely to become contaminated are eliminated. The careful dairyman gives special attention to his own person as to cleanliness and wears special clothing while working with the milk. In milking, he uses a milk pail so constructed that the chances for contamination from the milker and cow are reduced to a minimum. The milk that is received from such dairies is of superior quality and as long as it is kept at a low temperature will be found to contain but a small number of bacteria. The care of the milking utensils is a very important consideration. Some dairymen will carefully wash their cans with boiling water and allow them to stand in a protected spot. Others make the sometimes fatal mistake of rinsing out the cans in cold water. In such cases, should the water be obtained from a contaminated well, an epidemic of typhoid fever is likely to be the result. Much of the milk is shipped to small retail stores in the two cities. In many instances the cans are permitted to stand near vegetables, thus absorbing odors and consequently impairing the quality of the product. Quite frequently the dealer is careless about returning the cans to the shipper. Often they are not rinsed out when the last portion of milk is sold and when, after a few days they are received by the shipper, who may be located at a point one hundred miles distant, they are in a shocking condition. The dairyman often complains about this state of affairs; especially does he do so when he finds the cans have been used for garbage. In some cities, the laws provide for the prompt return of the cans, requiring the dealer to rinse and scald them as soon as emptied. All dealers are fined who fail to comply with this law.

A great part of the milk supply of Greater Pittsburg is produced in the state of Ohio, some of it coming from within thirty-five miles of the city of Cleveland. In this territory, the milk is to a great extent sold to the large companies who maintain receiving or centralizing stations. The milk is Pasteurized before it is shipped to the city. One of these centralizing plants may have as many as two hundred patrons. It is quite obvious that if among these dairymen there are some who are extremely careless the entire amount of milk handled is quite certain to become contaminated. Such milk may be Pasteurized, but the process of Pasteurization will not make good milk out of poor milk. The milk must be in excellent condition before it is passed through the Pasteurizer.

In order to guarantee the quality of their product, some of the companies in various parts of the country maintain a department of dairy inspection whereby the dairies and Pasteurizing plants are regularly inspected. All dairymen are required to comply with certain rules and regulations affecting the handling of the milk and the general conduct of the dairy. Such companies refuse to accept milk from those who fail to comply with the regulations. This is a great stride in the right direction.

In some cities a portion of the milk is produced by the so-called sanitary dairies. These dairies have buildings of special construction so that they are well supplied with light and air. Special attention is given to the smallest details in order to assure a product that is practically ideal. The number of bacteria present is necessarily quite low, and the milk is as safe as extreme care can make it. But in spite of the unusual care exercised there are at least a couple of cases where epidemics were due to sanitary milk. Such milk commands a much higher price than ordinary milk so that it is not within reach of the masses.

Of more common occurrence is the certified dairy. A certified dairy is regularly examined by a board of milk experts whose duty it is to inquire carefully into the conditions which exist at the dairy. The chemical as well as the bacteriological examination of the milk and the water supply are made frequently. Such milk when offered for sale bears the stamp or seal of the board of experts. This milk is often referred to as "certified milk" but is more properly *inspected milk.* The dairyman whose milk is inspected in the above manner share in paying the expense of the board.

In certain cities boards of experts are organized for the purpose of analyzing the milk offered for sale by those dealers who desire to obtain the certificate of the board. The milk is examined chemically and bacteriologically. The dairymen are required to care for the cows and the surroundings in accordance with regulations laid down by the board. The two things chiefly considered by the board are the chemical and the bacteriological analyses. If the milk comes up to the chemical standard and the number of bacteria is not very great, a certificate is given. This method provides a guarantee as to the chemical and bacteriological condition of the milk but does not provide for *dairy* inspection. Such milk receives the designation of "certified milk."

The question has often been raised as to the advisability of condemning all milk found to contain vast numbers of bacteria. At one time the authorities of New York City proposed to reject all milk containing more than 50,000 bacteria per cubic centimeter. It was found that should such a law be enforced practically all the dairymen would have to go out of business, since most of the milk offered for sale contained many more than this number. However, through the observance of certain very simple precautions, it is quite possible to greatly improve the condition of the great bulk of milk that is sold in our cities to-day. No dairyman should be permitted to offer milk for sale that has not been thoroughly cooled immediately after being drawn. This precaution in connection with the others that have been mentioned would have a tremendous influence in bringing about a better state of affairs.

It is quite evident that our city authorities should at once take up the matter of enacting laws which will provide for the competent inspection of all dairies that are engaged in producing our city milk supply, and also for the proper handling of the milk on the part of the wholesale and retail dealers. This would require the appointment of seven or eight additional inspectors. The matters which should receive special attention on the part of the city inspectors are as follows:—

1. Physical condition of the cattle.
2. The general conduct of the dairies.
3. The water supply. This is especially important.
4. Occurrence of cases of typhoid fever and other infectious diseases. A regular system of reporting all cases to be observed.
5. The handling of milk cans. All cans to be sterilized, sealed and returned to the shipper within thirty-six hours from the time that the cans are received.
6. The bacteriological and chemical analyses.
7. All milk containing more than 200,000 bacteria per cubic centimeter to be condemned.

THE ADAPTATION OF COW'S MILK TO INFANT FEEDING.

BY OGDEN M. EDWARDS, JR., M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, March 19, 1907.)

Nutrition is the most important consideration of infancy. A proper diet during this period is of vital moment.

Mother's milk is the natural food of infancy. No food has been manufactured nor modification devised that can equal breast milk as a food for infants.

When an infant is deprived of its natural sustenance, some other must be substituted. This substitute should correspond, as nearly as possible, to the natural food, chemically and physically. The nearest approach to mother's milk is the breast milk of another woman. Next to human milk, the food that resembles mother's milk most closely is the milk from some other mammalia. Cow's milk is almost universally used to supply the substitute for breast milk. Cow's milk, however, while it resembles human milk, is not a perfect substitute for it. In order to make it a proper food for infants, it must be adapted in some way to their needs.

The best method for adapting cow's milk for infant feeding has as yet to be universally acknowledged. Many methods have been tried with more or less success. Many have failed. Some of these methods have been based on scientific principles. Others have been used empirically. Some have been founded on half truths; others on a misinterpretation of facts. Some methods are better than others, but no method, however perfect, will succeed in every case.

A subject as complex as substitute infant feeding may be approached in various ways. In order, however, to have the right conception of the subject, there are some fundamental principles which it is necessary to understand. In the first place, it is necessary to have some knowledge of those properties of breast milk which make it the ideal food for infants. In the second place, it is necessary to recognize some of the properties of cow's milk and some of the ways in which these properties differ from those of breast milk. In the third place, a certain knowledge of the physiology of infantile digestion is required.

The results thus far obtained from the study of breast milk are not entirely satisfactory. Scientific methods of investigation are as yet unable to solve all the problems concerning it. Much, however, has been done within recent years and some truths have been firmly established.

Breast milk is a perfect emulsion. Its reaction is amphoteric or slightly acid. It contains representatives of all five of the principal classes of foods—fats, carbohydrates, proteids, salts and water. That all of these five classes of food are essential to a normal development may be shown by physiological tests, as well as by clinical observation. When any one class is wanting, there is invariably impairment in the nutrition of the infant. Further, a symmetrical development of the infant requires not only the presence of all of these constituents, but that they should maintain a certain quantitive ratio. In normal breast milk these constituents do not always occur in exactly the same percentages, but they may vary in small limits. They vary slightly according to the period of lactation. They vary at different times in the same woman, and may be influenced by the health, the diet and the mental condition of the woman, and also by exercise.

The average percentages of normal breast milk are fats, 3 to 4 per cent.; carbohydrates, 6 to 7 per cent.; proteids, 1 to 2 per cent.; salts, 1 to 2 per cent.; water, 87 to 90 per cent.

The fats are made up principally of palmitin, stearin and olein. The percentage of the fats is very little influenced by the period of lactation. In a disturbed lactation, however, the percentage of fats is subject to greater variation than any of the other constituents. Fats maintain the body heat and also aid in cell development, especially in the formation of bone and nerve tissue. They promote also the absorption of salts from the intestines, and maintain a healthy function of the lower bowel.

The proteids are as yet very imperfectly understood. They are composed of casein, 59 per cent., whey proteids, lactalbumin and lactoglobulin, 1.25 per cent. Proteids furnish the only source from which the tissues obtain nitrogen. without which no protoplasm can exist or cell life be possible. Next to the fats the proteids vary more than the other classes of ingredients.

The carbohydrates are composed of lactose. They increase the formation and development of fat and are an important source of heat. The potential energy is to the potential energy of fat as 1 is to 2.4.

The salts, which consist chiefly of calcium phosphate, potassium carbonate, sodium chlorid, potassium chlorid and potassium sulphate, enter into the formation of all the body tissues. Bunge claims that the percentage of the salts as found in the breast milk corresponds quite closely with the percentage of the salts as found in the tissues of the infant.

The water makes it possible for the different classes of food ingredients in the milk to be absorbed. The percentage of water in breast milk is large. Nature's infant food is one of high dilution.

In adapting cow's milk for infant feeding, it must be recognized that no modification of cow's milk, however perfect in its chemical percentages and physical properties, can change it into breast milk. A synthetic breast milk has yet to be found.

Milk from an individual cow varies in quality and quantity. Changes occur at different periods of lactation. It is also affected by the character of the food, the state of the health, and nervous influences. Its normal equilibrium is disturbed when the cow comes in heat.

In order to obtain milk with uniform percentages it is necessary to use herd milk instead of the milk from a single cow.

The milk from certain herds has been shown to be better adapted than others for use in infant feeding. Those herds which show a vigorous constitutional development and notable ability to raise their young are the best for this purpose. The Shorthorns, the Holsteins, and the common red cows represent such breeds. The milk from Jerseys and Guernseys is not so well adapted for the requirements of infant feeding.

Breast milk is supplied fresh to the infant with each feeding. Nature evidently considered that this was the best method. It is, of course, impossible to do this with cow's milk, but, nevertheless, nature should be imitated as closely as possible in this matter. Fresh milk has properties which older milk has not, and it is probable that these properties are beneficial to the development of the infant. Freudenreich has demonstrated that freshness has a distinct germicidal power. He claims that typhoid and cholera bacilli are destroyed by fresh milk. This power he found absent in older milk. Too little importance is attached generally to the necessity of supplying milk to infants fresh.

Breast milk is also supplied clean and practically sterile. Cow's milk fresh from the udder is also substantially sterile.

Bacteria grow rapidly in milk. A milk which may have 9000 bacteria in a cubic centimeter will at the end of 24 hours, under favorable conditions, have 5,000,000 bacteria. These bacteria, especially in summer time, may be extremely injurious to infants. The dangers of the child from infected milk increase directly with the number and virulence of bacteria. It is more important to the health of the child that the number of bacteria be low than that the percentage of fat in the milk be up to a legal standard. That the percentage of fat in cow's milk should be regulated by the law, and that the adulteration of milk should be illegal, is eminently proper; but a certain bacterial standard of excellence should also be required.

Bacteria from systemic diseases of the cow, as well as from local infections of the udder, may infect the milk. Pathogenic organisms may also gain access to the milk from without. Milk may thus be the agent for the spread of contagious diseases and also infectious diseases. Other bacteria than pathogenic ones are likewise found in the milk. That these exert a beneficial effect on infantile digestion has yet to be demonstrated.

The number of bacteria in cow's milk depends directly on the cleanliness of handling it, the temperature, at which it is kept, and the age of the milk. The technic of cleanliness must be carried out consistently from the dairy to the nursery. No point is of more importance in keeping down the number of bacteria than the first early cooling. Milk should be cooled immediately after it is drawn from the udder and kept at a temperature below fifty degrees Fahrenheit until it is used. Milk taken care of in this way possesses all its important vital constituents. It is a live fluid. It is the milk best adapted for use in infant feeding. Other less valuable methods are used to keep down the growth of bacteria.

Sterilization by heat is an effective way of doing this. In order to obtain a perfectly sterile milk, however, this process must be repeated on two or three successive days. Sterilization kills the bacteria, but it does not remove the dirt or the toxin which may already be in the milk. Sterilization affects the chemical properties of milk. Casein is made less valuable; the fat is separated out in the form of butter. The lactalbumin is in part coagulated and rendered less valuable. The natural ferments in the milk are destroyed. Some of the lactose is converted into caramel.

The continued use of sterilized milk produces constipation and is an important etiological factor in producing scurvy and rickets. There is only one advantage obtained in the use of sterilized milk; it protects the infant from infection. Sterilized milk is useful in infant feeding only when clean, fresh milk can be had. The dangers from its temporary use, however, are much less than the dangers from dirty milk. Sterilized milk is not an infant food. Without some additional modification, it is less adapted to infant feeding than raw milk, because it is less digestible.

Pasteurization is heating milk to 150 degrees Fahrenheit and maintaining it at that temperature for thirty minutes and then rapidly cooling it. This method will kill most of the pathogenic bacteria without producing all the objectionable changes in the milk caused by sterilization. Milk properly Pasteurized is preferable to sterilized milk for infant feeding. The disadvantages of Pasteurized milk are fewer and its field of usefulness is greater than sterilized milk. It has been shown that bacteria multiply more rapidly in sterilized and Pasteurized milk than in raw milk.

The percentage method of modifying milk has been established on a firm basis, and is to-day probably the best method of adapting cow's milk for use in infant feeding. This method presupposes that human milk is the ideal milk and that the best substitute is one which contains the same constituents in approximately the same proportion. It recognizes that there is a difference in the digestibility of woman's milk and cow's milk. It aims to regulate the proportions of the milk ingredients to the needs of the infant. One great advantage of this method is that it is the most exact method, infant feeding being thus placed on a scientific basis. In its scope and elasticity, it far surpasses all other methods. Its advocates recognize, however, that it will not succeed in every case.

A comparative analysis of cow's milk and breast milk shows the greatest difference to occur in the sugar and proteids. In breast milk the sugar is 7 per cent., while in cow's milk it is 4.5 per cent. The proteids in breast milk are 1.5 per cent., while in cow's milk it is 3.5 per cent. In cow's milk five sixths of the proteid matter is casein, while in breast milk it is only two sixths of the total proteid. The fat is practically 4 per cent. in each. The amount of water is about the same.

In order to modify cow's milk so that the percentage of its ingredients will correspond to those of breast milk, it is necessary to have, in the first place, a cream mixture of cow's milk whose percentage of fat is known; in the second place, a fat-free milk to be used to increase the percentage of proteids beyond that found in the cream mixture; in the third place, milk sugar, to increase the percentage above that found in the cream and fat-free mixture; in the fourth place, sterile water for use as a diluent. Having these four essentials, it is evident that numberless combinations of percentages are possible within certain limits.

Milk laboratories are prepared to furnish milk modification of exact percentages. Fairly accurate percentages may be obtained by home modification. Failure to succeed with percentage feeding may be due to many causes.

A proper amount of the food is necessary. Nature has demonstrated what the proper amount is for the average infant of a given age. For the individual infant, its normal appetite should be the guide, but the difficulty in knowing a normal appetite makes this guide unreliable. A careful clinical observation of the infant is necessary in every case, in order that the right amount may be determined.

Correct intervals between feedings are necessary to success. Here we have no mother instinct to indicate the natural time for feeding. The infantile appetite would seem to be the natural guide, but the diagnosis of hunger is not always possible. Clinical experience in the feeding of children has shown what interval is best for the average infant. Different intervals must be determined, however, for infants who are not of the average. It seems probable that intervals under two hours are correct only in rare cases, and it is demonstrable that more infants do well when fed at regular intervals.

A pregnant source of failure is to give, in the beginning, a milk of too high percentages. Modified milk might be regarded as a foreign substance in the infant stomach. The percentage of the food ingredients should be begun low and gradually increased according to the ability of the infant to digest them.

Failures may be due to a too high per cent. of fat. Next to the proteid, the fats cause most of the trouble. It seems probable that the use of a fat over 3.5 per cent. is seldom, if ever, required. A too high percentage of fat may cause vomiting, anorexia, diarrhea. A too low percentage may result in a slow gain in weight, constipation and rickets.

The proteids give the most trouble. It seems probable that the percentage of the proteids should vary according as the infant is able to digest them. A too high percentage gives colic and foul smelling stool mixed with curds and mucus. A too low percentage produces anemia, inability to gain in weight and, later, impaired digestion. Several methods have been devised to make the proteid of cow's milk more easily digestible.

The total percentage of proteid has been reduced by diluting the mixture with water. The percentage of casein in the proteid has been reduced by using whey. This method of splitting the proteid is used most successfully when low percentages are required.

Cereal water has been added as a diluent instead of water. To what extent starches are able to be digested by young infants is still an unsettled question. Gruels, however, when used as diluents have a mechanical ability to diminish the size of the casein used. Cereals, therefore, used in cases of weak proteid digestion may do good. They are probably not necessary for young infants with a normal digestion.

Cereal water used in the early months should be weak. Its strength should be increased with the age of the infant.

The proteid may be made more digestible by the addition of alkalies. Ten per cent. of lime water in a mixture of low percentages will delay the coagulation of the casein. Soda bicarbonate will also delay its coagulation. Citrate of soda decalcifies the casein, and sodium casein is produced, which rennet ferment will not coagulate. One grain of citrate of soda should be added to each ounce of the milk mixture.

The carbohydrates in modified milk seldom cause trouble. The addition of cane sugar, instead of milk sugar, is often beneficial, especially in infants with constipation.

As yet there has been no attempt made to modify the proportions of salts as found in cow's milk. Sodium chlorid should be added to the food of every bottle-fed infant. This addition has a certain value in relieving constipation.

No proprietary infant food can ever be a perfect substitute for breast milk, nor can it equal properly modified cow's milk. The percentages of their food elements are not suitable to the requirements of a symmetrical development, nor are they of the proper character to be best adapted to infantile digestion. Proprietary foods are composed principally of carbohydrates, either in the form of dextrose, dextrin, maltose or an unchanged starch. They are all lacking in fats and their proteids are of vegetable, not animal, origin. Without the addition of the life giving milk proteid they will utterly fail. They are not suitable for use in early infancy and their field of usefulness in later months must of necessity be small.

The analysis of condensed milk shows it to be low in fats and high in sugars. Diluted with water and with the addition of the proper amount of fat it might be adapted for temporary use in infant feeding. It is a sterile milk and is digestible on account of the low percentage of proteids and fats. Its continued use produces fat but rachitic children.

In conclusion, this paper would wish to emphasize the following points:—

First. Cow's milk should be supplied to infants fresh.

Second. It should be practically free from bacteria.

Third. It should be given regularly at suitable intervals in quantities sufficient for the needs of the individual infant.

Fourth. Cow's milk, unmodified, is not adapted for the feeding of young infants.

Fifth. The best method for adapting it for infant feeding is that method which aims to change the percentages of the different classes of food ingredients found in cow's milk to suit the requirements of the individual infant.

DISCUSSION.

ON PAPERS OF MESSRS. COPELAND AND FETTERMAN AND DR. EDWARDS.

In opening the discussion, Dr. Eaton expressed his appreciation of the great value of the papers and especially complimented Dr. Edwards on the scope and breadth of his paper. Then he referred in an historical way to some of the first good work done in this country for the improvement of the milk supply, referring especially to the work of the New Jersey commission as organized by Dr. Coit, and others, of Newark. He briefly spoke of their methods and related some of the tests of efficiency there displayed. Dr. Eaton then spoke of the usual methods of handling milk and related some experiences he had had with the large jobbers in this city and of their methods. Then he described the way milk should be handled from the preparation of the cow for milking, the personal cleanliness of the milkers, and followed the processes until the milk was delivered to the customer. After reviewing the salient points of Mr. Copeland's paper, he referred to the points of Mr. Fetterman's paper, and suggested that the points embodied in Mr. Fetterman's conclusions be made the base of an appeal to the powers that govern this city to the end that suitable ordinances be prepared by which the people could be reasonably sure of getting wholesome and proper milk. Dr. Eaton then spoke of the use of cow's milk in infant feeding, and the necessity of having, first, a proper supply, and secondly, of the necessity of understanding that the physician must have a thorough knowledge of the individual baby and its needs before he made up a formula for its food. He intimated that "average" babies were rare and that each must be handled as an individual unit. In review, he emphasized the fact that milk must be clean, must be kept cold enough to inhibit the growth of germ life, and must be handled as little as possible before using.

Dr. Small said he wished to say a word in regard to the use of sodium citrate in milk, especially in proteid indigestion, of which Dr. Edwards spoke very briefly. In 1893, Dr. Wright of England first called attention to the fact that the addition of a solution of sodium citrate in definite proportion to milk would cause, in the presence of the gastric secretion, a curd much less tough and more flocculent than without it. In the past two years a number of men in this country, notably Cotton of Chicago and Shaw of Albany, have tried and warmly recommended this method.

Sodium citrate is an official drug, but little used in medicine and then principally as a purgative in the dose of six to ten drams. It is a nonpoisonous, white, crystalline, neutral salt, very soluble in water. It has a saline taste without bitterness and when added to milk in the proportion recommended has no taste, and babies take it readily. Different views have been held as to its chemical action. It was first thought that in the stomach in contact with the gastric juice the calcium casein was decomposed with the precipitation of insoluble calcium citrate—the so-called decalcification of milk—and with the formation of sodium casein in more flocculent form. Another view is that the sodium citrate in the presence of HCl in the stomach breaks up into NaCl and citric acid and that these latter prevent the formation of dense curds.

In the treatment of proteid indigestion the usual method is by the quantitative reduction of the proteids by dilution with water to a percentage far below what is absolutely necessary for the growth and development of the child, and also far below their percentage in normal human milk. The important question is not how to reduce the proteids and sustain life, but how to give them in the proper amount and still maintain digestion unimpaired. Sodium citrate by the inhibition of dense coagulation in milk helps greatly in this direction. The great importance of this method is the larger proportion of milk in the various feeding mixtures which the infant will tolerate with no signs of indigestion. Dr. Cotton in reviewng 112 cases treated by this method says that no case has been brought to his notice in which he had any cause for regret.

In its administration the average dose is one grain to the ounce of milk; not to each ounce of the total fluid, however, but of milk. It may be given up to three or four grains to each ounce of milk, depending on the effect. A solution should be ordered containing, say, six grains of the salt to a dram of water, so that ten drops of the solution contains one grain of sodium citrate. It should be used by putting it into the milk mixture just before the child is fed.

In the Children's Hospital last October, November and December he used it in a series of cases of gastrointestinal disease with undigested and offensive stools in which there were many curds. These curds almost entirely disappeared, the stools became of a greatly better appearance and the children improved in general condition. He also used it in cases with vomiting of curds and with good results.

Its greatest benefit is in those cases in which the gastrointestinal disturbance is caused by the proteids.

Dr. C. C. Hersman said that after all that has been said, many times you must send the child far enough into the country to be out of the reach of all brewery swill fed cows. Keep the child out of doors and give it morning milk through the day and the *evening* milk through the night, which again emphasizes what has been said, "Fresh milk is the only safe milk in many cases."

Dr. Harry Price mentioned the fact that pure milk may be obtained by the aid of a patent milker which has been demonstrated to be successful. Often the vessels receiving the milk at the home are dirty enough to contaminate good milk.

The presence of starch in food may be regulated by the iodin test of starch in stool.

Often increased fat causes constipation and other disturbances. A low fat percentage is frequently as necessary as a low proteid percentage in disturbed digestion.

Dr. H. M. Hall, Jr., said that he wished to express his appreciation of the potent remarks and papers read.

The great difficulty of pure milk has been solved in the laboratory but only apprehended (hardly that) on the farm and entirely neglected on its way to the consumer by railroads and middlemen. It is not beneath the dignity of this scientific body to lend its aid in the solution of these practical problems. The final test of science is every day results.

The week of May 6, the Pittsburg and Allegheny Milk and Ice Society is to give a Carnival in Duquesne Garden. Its object is not only philanthropic but educational, and a popular scientific lecture and program with lantern slides and graphic exhibits are being arranged. Any suggestion or help offered to make this opportunity profitable to the public will be welcomed.

He wished just a moment in which to refer to the policy entered into three years or more ago by the Medical Society of Milwaukee, Wis. Its certificate was furnished to the products of the "Edgewood Farm" at Pewaukee. On the assurance of the society's expert, the milk commanded the highest price and the entire product was insufficient for the demand. In fact the price was increased for the purpose of creating a surplus to be sold in Chicago. If, in the midst of one of the finest dairy regions of the world, Milwaukee physicians are warranted in such organized action, how much more pressing is the necessity line in Pittsburg, where advance is slow but sure, and every natural disadvantage stimulates the conquering will of man. Being surrounded by a host of populous industrial communities a complaint is not of the scarcity of good heads, as it was, but of the consumption of the entire output at home so that only the dregs reach us.

A milk commission should be instituted by this society to foster all practical measures that might encourage local capital in the multiplication of model dairies. Shall we call the result philanthropic milk? It is life giving.

Dr. Thomas Turnbull, Jr., said the key to the solution of the pure milk question is cost. The farmer can not produce milk, up to the standard set forth to-night, at the price he now receives. With the high cost of feed and labor, it is a question if the farmer is making even the manure, as profit, on milk shipped into Pittsburg, at present price for it.

To get good milk, certified milk, the consumer must pay from twelve to fourteen cents a quart and the producer must receive from six to eight cents.

Fat content is no sign of the purity of milk. A milk with a 3 per cent. butter fat may be much cleaner (purer) than one with 4.5 per cent. Demand purity and pay for it and you can get it. You can not get it when the farmer is getting present prices. He is only human and is not going to the expense of producing good milk unless he can get better returns than at present.

The number of bacteria present per cubic centimeter is of far less importance than the variety. A million lactic acid bacilli may be present with more safety than one thousand colon bacilli. Number often simply shows that milk is old. As a general rule, however, the fewer the bacteria, the better the milk, at least, the fresher.

To close, pay the farmer a living price for pure milk and he will give it to you.

Dr. J. Edwards said that the problem of a pure milk supply has not yet been satisfactorily solved by any large municipality. Some have more nearly reached a solution than others. Our own city has but made a beginning. Until recently there has been only one inspector for the whole city. At present there are three. As a large part of the supply is furnished by far distant dairies, only a limited number and those near the city are in any sense under control. An attempt is being made at present to raise the standard among the dairymen within the city and in its vicinity by personal inspection and by distribution of printed rules, laying stress upon the necessity for producing clean milk.

In many cases where the instructions of the inspector have not been followed and when unhygienic conditions have not been corrected the dairymen have been fined. This has had a salutary effect. Previously the only fines imposed have been for deficiency in butter fat and for adulterants. There has recently been much discussion concerning the advisability of requiring that all milk except certified milk be Pasteurized. Undoubtedly if all the milk used in this city at present were properly Pasteurized the sum total of disease would be reduced. Yet it is a question whether this would be desirable. Emphasis should be laid upon clean milk. The solution of the problem lies in the education of the public and in the provision for an adequate inspection of all producers and dealers. Our laws need revision in this state. The medical profession must lead in the campaign for clean, wholesome milk.

Dr. A. Ralston Matheny remarked that after an investigation of the three largest milk companies in this city as well as the company that furnishes "formula" milk for infant feeding, he finds that the very earliest they deliver milk makes it at least thirty-six hours old. Of necessity, therefore, the milk must be used until it is sixty hours old before the next delivery.

The small local dairies of which he made inquiry furnish milk, as a rule, not later than twelve hours after milking. The latter quality, therefore, is much preferable for infant and invalid feeding, providing cleanliness can be obtained, as we must admit that the larger corporate dairies have cleaner methods of handling their products than the so-called local dairy.

We have all seen the badly nourished infant do well in the country on fresh milk with most any form of mixture, after having failed with a scientific mixing of old milk of the city dairies.

A practical point which he would like to bring to the attention of the society is that brought forward by Much and Römer of Berlin, who claim that sunlight so changes the fat of milk by oxidation that it is unfit for infant feeding, and they suggest that the milk be delivered in bottles covered with dark green or black paper. Very often by the present custom the milk stands on the porch for two or three hours in the bright morning sun. This may account for its indigestibility.

THE WORK OF THE PRESENT PITTSBURG ORGANIZATION.

BY WILLIAM CHARLES WHITE, M. D.,
Medical Director, Pittsburg Sanatorium, Pittsburg.

(Read before the Allegheny County Medical Society, February 19, 1907.)

Mr. President and Gentlemen: I appreciate greatly the thoughtfulness which you have evinced through your committee in allowing me to meet you in this way.

I have been impelled by certain conditions which have arisen within myself to forsake the work of my choice in former years to devote my time to tuberculosis in an organization in this city, which has charity for its foundation and brotherly love for its stimulus.

After sitting for months in a chair, breathing pure air in the wilds and the mountains, with little to do but retrospect, introspect and prospect, and wait till the lesions in my lungs should heal and allow me again to take my place in the fight, the answer to this question, "What good have you done in the past and in what work can you make the best use of your remaining years?" which I so often asked myself, is my incentive for being here and must serve as the apology which I feel I owe you for what I will say to you; things with which you all are familiar, but which need repetition, and I hope you will be as kind in listening as you have been in asking me to appear before you.

It is now twenty-five years since Koch announced to the world the cause and proved the infectious nature of tuberculosis. What has been the advantage to our city of this discovery? In the last year Dr. Shaw has done a great deal in looking after his charity patients at Marshalsea; Dr. Edwards has done much and Dr. Matson has kept careful record of all who have come to his office. It has taken twenty-five years to reach this. All are fully alive to the necessities and would accomplish what I hope to outline to-night if they had the money. There are, gentlemen, two things that will force this question upon men and women so strongly that they can not escape it. One is to get tuberculosis himself; the other is to lose his best and dearest by the same malady. This has been responsible for the present organization which I represent before you. Every man in it has had the door of his home marked by the angel of death and Charon has carried some one or more of his household across the river. It is this also that has stimulated the tender of the house, in which we are now starting our crusade, by Mr. William McConway for the purpose of caring for as many as possible in this way.

Our institution has been two weeks open.

There have been now fifty-six applicants, twenty-five of whom we have taken. We have just now thirty beds, but are preparing at once for about twenty more. Our endeavor has been to take those cases where most good could be done. We have taken mothers to prevent them from infecting their children; fathers, whose wives could support their families if the father could be nursed; and orphans without homes or means of support who can possibly be returned to the state able again to earn a livelihood.

You gentlemen hear enough sad tales without burdening you further. You may ask me why I speak of it at all; because, beyond all other things, we need your sympathy and your help in everything we are attempting. Especially can we do very little without the help of every doctor in the Allegheny County Medical Society, which is, as Dr. McCormack of Bowling Green, Kentucky, has said, "The most powerful organization in the national association." The county society bears the same relation to the American Medical Association that our organization bears to the National Association for the Study and Prevention of Tuberculosis; that is, this is the most important factor in the work in the fight against tuberculosis, an organization which, in the center of population, takes care of the cases of that community. No institution could possibly be in a better situation and have better facilities for the treatment and cure of this malady than that which we have so recently opened.

Now as to our object. It will be, to carry out the statement of Dr. Pryor before the national association committee, "to care for the consumptive in the right way, in the right place, and at the right time, until he is well.

We hope to gain knowledge of every case in this city; to help every one needing help; to teach all the laws governing the prevention and cure and the eradication of this disease, and to see that these laws are carried out. To accomplish this, we hope to enlist and hold the sympathy and help of every one in this community. As a means to this end we will establish an organization similar to that built by one of the ablest and first workers in this crusade, Dr. R. W. Philip of Edinburgh, from whose articles I will quote to you most of the following paragraphs which outline, more definitely than any other source, a complete organization necessary for the control of this disease.

"Most existing movements against tuberculosis fail in attaining all they might, because they are too partial. In many centers throughout the world, antituberculosis societies have been founded. The intentions of these have been good, but in practice less has been effected than is to be desired from insufficiency in the plan of operations. Excellent as much of the work has been there is too generally lacking the element of efficient organization.

"Through the agency of such societies there has been disseminated a large amount of serviceable information regarding the nature and prevention of the disease, and public interest in the subject has been aroused. Under the ægis of such societies or other charitable or public bodies, provision has been made for the treatment of a certain number of cases of tuberculosis. Sanatoriums have been founded in many places for the curative treatment of more hopeful cases, and hospitals or asylums have been established for the reception of patients in more advanced stages of the disease. Some communities have favored attacking the early cases, and aimed specially at the cure, or at least, the relief of the individual, while others have attacked specially the later cases with a view to preventive treatment.

"In not a few instances the conception of founding sanatoriums has bulked too largely in antituberculosis movements. The public has been lead to expect too much from sanatorium régime, in respect both to individual cures and to the distinction of the disease. As the results of sanatorium treatment accumulate, and as these are found less uniformly good than the hopefulness of the over-sanguine had expected, there begins to be manifested a feeling of disappointment and almost of annoyance. Already the question is being freely asked, 'Are sanatoriums worth while?'

"The solution of so vast and far-reaching a social problem can only be hoped for by means of a most carefully organized and coördinated plan of action. Much will be gained by uniformity of plan throughout the country, and, as far as possible, throughout the world. Such a scheme of organized and coördinated operations against tuberculosis must, in my opinion, include, for all our larger centers, the following factors to which I desire severally to direct your attention: (I.) Notification of the disease. (II.) A tuberculosis dispensary. (III.) A hospital for dying patients. (IV.) A sanatorium or sanatoriums for selected patients with a view to cure the disease. (V.) Colonies for the residence and guidance of patients in whom the disease is latent, or has been arrested, and for whom carefully selected and supervised employment is desirable."

I. In common with all infectious disease, every case of tuberculosis ought to be reported to our Board of Public Safety, which should assume some control of each case reported to it. This should not, however, interfere with the individual treatment of these cases by their own physicians, but should care for all cases that are not under the direct supervision of a medical attendant, and supervise the fumigation of rooms in which consumptives have lived. We must not, however, believe that notification of this disease is going to help us in the cure of individual cases; in other words, it is not to help us so much with the medical problem, but rather, with the social problem, aiding us in the eradication and ultimate control of every tubercle bacillus. Our state provides for this notification, and Dr. Edwards has it in mind to require it, under penalty, at all times of every physician in the community.

II. We must look upon the dispensary, as Dr. Philip has made so clear, as the basis and ground work of our tuberculosis work from which radiates all other departments and which will supply the most potent factor in the control and cure of the disease. No better outline of the object of the dispensary can be given than that of the Victoria Dispensary in Edinburgh, which is as follows:—

1. The reception and examination of patients at the dispensary, the keeping a record of every case with an account of the patient's illness, history, surroundings and present condition, the record being added to on each subsequent visit.

2. The bacteriological examination of expectoration and other discharges.

3. The instruction of the patients how to treat themselves and how to prevent or minimize the risk of the infection to others.

4. The dispensing of necessary medicines sputum bottles, disinfectants, and, where the patient's condition seems to warrant it, foodstuffs and the like.

5. The visitation of patients at their own homes by (1) a qualified medical man and (2) a specially trained nurse for the double purpose of treatment and of investigation into the state of the dwelling and general conditions of life and the risk of infection to others.

6. The selection of more likely patients for hospital treatment, either of early cases for sanatoriums or of late cases of incurable homes, and the supervision, when necessary, of patients after discharge from hospital.

7. The guidance, generally of tuberculous patients and their friends, and for inquiries from all interested persons on every question concerning tuberculosis.

The Victoria Dispensary as at present arranged contains two consulting rooms, a laryngoscopic room, one large waiting room, two dressing rooms (male and female), a general office where names are entered, a laboratory for bacteriological examinations, and a drug and food store. The dispensary is opened thrice weekly for three or four hours.

The staff consists of:—

1. Four qualified physicians who attend when the dispensary is opened for the purpose of examining and instructing patients. Three of the physicians are honorary.

2. One of the medical officers receives a salary of $300 a year, and devotes a large amount of time to the work. In addition to examining patients at the institution, along with the honorary physicians, he pays domiciliary visits to the dwellings of patients in coöperation with the trained nurse. He makes bacteriological examinations of expectoration and other suspected discharges. By arrangement of the city authorities, he notifies all patients having tuberculosis whom he meets. He advises regarding the disinfection of houses during illness and after the removal or death of the patient. He supervises treatment of patients at their own homes when this is desirable. He selects suitable patients for the sanatorium. In coöperation with the city authorities, he drafts the more advanced or dying patients to a hospital now dedicated to such cases in the neighborhood of the city.

3. A nurse who has been carefully trained in modern open-air methods at the Royal Victoria Hospital for Consumption, Edinburgh, the sanatorium in connection with the dispensary, visits the homes of the patients. She readily wins their confidence by her interest in their welfare. She instructs the patients or their friends (wives, mothers, etc.) both as to treatment and prevention. In coöperation with the visiting physicians, she reports regarding the patient's residence and other conditions, according to the annexed schedule of inquiry. The reports, when completed, are vouched for by the signature of both doctor and nurse.

4. A volunteer Samaritan committee of ladies, in conference with the doctors, takes charge of more distressing cases, where, through prolonged illness, the financial conditions have been much reduced. In many cases they visit the patient's house. With the assistance of the numerous charitable and parochial organizations which exist in the city, they are enabled to adapt the relief necessary to the particular case. The members of the Samaritan committee further occupy themselves with the question of suitable employment for the tuberculous persons fit for some effort, although unable to work an entire day. In some cases they arrange likewise for persons who have been discharged from the sanatorium. Attention is also paid to school children affected with the disease, so as to have their education supervised on more physiological lines. The operations of the committee are regulated at fortnightly meetings, and a minute of the business is kept.

5. An officer, a working man, who gives his entire time to the dispensary, lives on the premises. This man receives and enters the names of the patients on the afternoons when the dispensary is open. When the dispensary is not formally open he attends to requests from patients and other persons. The officer is conversant with the home and work conditions of many of the patients, and is a valuable lieutenant both to the doctors and nurses.

"An analysis of the records of the dispensary has yielded facts of the greatest importance. Thus, there has been illustrated the extreme frequency of tuberculous disease in children and housewives. A map of the city has been made, showing the frequency of the disease in certain houses and streets. Proof has been obtained of its occurrence along with various unsanitary conditions of dwellings (insufficient air, absence of sunlight, etc.), and the attention of the authorities has been drawn to the fact. The reports show the frequency with which one or more persons share a room, or even a bed, with the consumptive patient. Particular attention has been paid to such cases, either by removal of the affected patient to a sanatorium or to a hospital for dying patients, or by removal of unaffected members of the household to healthier surroundings. One of the doctor's duties in such circumstances is to examine into the health of other members of the family. It is remarkable how frequently two or three, or even more persons, not previously suspected, have thus been shown to be tuberculous. Another important point has emerged, viz, the frequency with which the tuberculous patient, from one cause or another, often from financial reasons, changes his house. By this means infected areas become quickly multiplied. The records also show the absence, apart from the interference of the dispensary, of precautions with a view to disinfection."

We have already started a city dispensary in conjunction with the department of public safety. We have also constructed a map of the city, indicating on the map the location of every case that is reported to us, and it will be our aim to establish later, new dispensaries in those districts in which cases of tuberculosis are grouped so that we can treat them from some location near their home and provide them with the necessities for the control of the disease from which they are suffering as outlined above.

III. "There can be no manner of doubt that the far advanced or dying cases constitute the greatest source of infection. This is more especially true in the case of those affected by the disease resident in the contracted dwellings of the poor where perhaps an entire family shares a room with a consumptive patient. All such patients require immediate removal to a hospital reserved for advanced and dying cases of consumption." We hope to make our present institution one for advanced or dying patients. As an example of the danger of these cases, we accepted a patient last week, a young lad from one of the outlying districts. The next day his mother brought the other three children of the family to see the boy. Noticing their pallor, we had her bring them for examination during the following week. We found all three of them to be suffering from incipient tuberculosis, contracted from living in close rooms with the patient whom we admitted. Another example was that of a young woman far advanced with tuberculosis, bedridden, and living with her sister in a single room. The sister was sleeping with her, working all day and nursing all night, and had, of course, also contracted the disease. This gives some idea of the sadness and danger surrounding the far advanced cases which ought to be controlled and cared for in some institution.

I feel sure that there should be attached to every institution of this sort, a crematory which will dispose of the dead bodies of these far advanced cases which form a nucleus for the spread of tuberculosis, as has been demonstrated in the mummies from Egyptian burial. It will be some time before we are educated up to this point and return to the wise custom of the ancients in building for their dead, funeral pyres, but I feel that it is a subejct that should be kept constantly before our minds.

IV. We hope to establish in the country near Pittsburg, a sanatorium for selected incipient cases which will be culled from our dispensary and present hospital.

"The great aim of sanatorium treatment is to get the patient at a sufficiently early stage, and, by means of open-air treatment, proper dietary and a carefully conceived regimen, to assist Nature in her attempt to resist invasion by the tubercle bacillus. The purpose is to increase vital resistance, and thus establish more or less immunity to the disease. As the discovery of more specific methods of treatment proceeds, these, of course, will naturally be utilized.

"The essentials of the present day sanatorium idea is the free exposure of the patient to open air. He must be bathed in fresh, pure air day and night, and this irrespective of the goodness or badness of the weather, as popularly understood. The more sunshine, or, at least, sunlight, the better for the patient. The two conditions which the tubercle bacillus can not withstand are fresh air and sunlight. If the patient will only be out of doors, lying, sitting, walking, or working, according to the nature of the case, a large part of each day, and when in doors will allow the freest access of fresh air day and night, satisfactory results may be obtained almost anywhere.

"Sanatoriums should be founded in immediate relationship to the large centers.

I desire to insist on this point with much emphasis. It is of the first importance to the hopeful tackling of the question in the widest sense that patients and the public should get rid of the prevalent, but most erroneous, belief that a cure can only be effected and health maintained under conditions which their ordinary residence and station in life will not permit them to enjoy."

There has been no greater truth declared in the tuberculosis work than this, that "tuberculosis can be treated in all climates with approximately equal success, and the necessity is to have the institutions for its treatment near patients, *i. e.*, in the place where the disease occurs.

V. The establishment of tuberculosis colonies is still in its incipiency and yet no more necessary department could be established to help the organization to do away with the tendency to idleness that develops in sanatorium patients. The colonies should try patients with work from the beginning of their ability to work until they are able, under supervision, to accomplish eight hours' work a day without harm to themselves, and so prevent the tendency to relapse, which is common enough in those patients that are sent back from our present sanatoriums as apparently cured. As Dr. Philip remarks, "Such colonies could be made practically self-supporting and would not necessarily be a burden and expense to the whole organization."

During the coming summer we hope to take leaves from the Boston Organization and take care of a number of cases at the McConway property, to feed them during the day time and allow them to go home at night for the advantage of the open air on these grounds, and possibly to take another group of cases that are able to work and have them sleep on the McConway property at night and feed them in the morning before they go to work. We hope also to establish classes for education in the different parts of the city; probably in connection with churches and schools for the education both of consumptives and their friends in the neighborhood of our dispensaries.

We have only just begun a work which those of you who have heard of will recognize as tremendous and almost infinite in its scope, and yet such an establishment is necessary for the control of this disease, and if any city should be able to develop it, this city, a community of which we form a part, should be able to accomplish everything it requires, known as it is for having the best of everything that the world produces.

Reports of County Societies.

BUCKS—MAY.

The Bucks County Medical Society held a meeting at Bristol on May 8. Those in attendance were Drs. Carrell, Chapin, Coburn, Crowe and Crowe, Eaton, Erdman, Fleekinstine, Fretz, Grim, Hannum, Hirsh, Janney, Kerns, LeCompte, Lovett, Martin, MIlhatten, Myers, Osborne, Pownall, Pursell, Richards, Scott, Slack, Smith, Swartzlander, Walter, Walton, Wareham, and Wilson.

Dr. M. C. Gabrielian of Pipersville was elected an active member of the society. Dr. George M. Grim was elected a member of the House of Delegates, and Drs. A. E. Fretz and E. S. Coburn, alternates. Dr. Joseph B. Walter, Solebury, was nominated for district censor.

The president, Dr. Carrell, referred in fitting words to the death of Dr. Swartzlander, Sr. The chair appointed Drs. Walter, Pursell and Richards as a committee to prepare a suitable memorial upon the death of our late member, Dr. Swartzlander. Later in the day the committee presented its report which was ordered to be made a page upon the records of the society and a copy to be furnished the JOURNAL.

Dr. Charles B. Smith, Newtown, chairman of the committee on revision of fee bill, read a very complete symposium on medical fees prevailing throughout Bucks County at this time, from which we quote as follows:—

Mr. President and Gentlemen: This important subject having engaged the attention of some of the members of this society, it was, upon suggestion, informally introduced by Dr. Frank B. Swartzlander at the February meeting. Evoking considerable interest and discussion in the midst of a somewhat varied program, it was determined by your president, Dr. Carrell, to appoint a committee to further consider the same and devise the best way of obtaining the sentiment of the society, also to inaugurate ways and means of a more formal presentation of the matter at a subsequent meeting; accordingly, following the call of the chairman of the committee, a meeting was held in Doylestown.

It was agreed to forward to all members a series of questions on blank forms, with the substance of which you are, of course, familiar; eliciting prevailing fees, ascertaining the feeling of members regarding a fixed schedule, and soliciting suggestions pertaining to the same. Further, it being the conjoined opinion of the committee that it was desirable to seriously consider, and, if possible, institute such a schedule, in order that rates might be more uniform and more adequately compensatory for services rendered, a draft of the same was formulated, in order to obtain a larger discussion pertaining thereto, and perhaps elicit your ultimate disposition of the same.

Out of the twenty-eight replies made, representing rather less than one half the membership of this society, three gentlemen were of the decided opinion that the measure was impracticable, two upon the ground of "unprincipled and untrustworthy competitors" while the third doubted its utility and practicability. The two former gentlemen obtain fees of $ .75 and $1.00 for all distances, without stipulated reservation as to day or night work, and command $5.00 as their obstetrical fee, while the third gets from $1.00 to $1.25, according to whether his work is "booked or not" and commands obstetrical fees ranging from $10.00 to $15.00 depending upon the character and circumstances of the cases.

With these exceptions, all report being favorable to an established schedule, pleading for a general and concurrent action in the matter.

Regarding the fees received for ordinary rides and practice, the following figures are submitted: For consultation at office usually with necessary medicines supplied, the prevailing fee is $ .50. One or two get as low as $ .35, another who keeps a record averages $ .45, a very few make mention of extras for more expensive medicines or special treatment. Lately some physicians are charging approximately the usual office fee for consultations over telephone. For visits the prevailing prices are reported as follows: Bristol, $ .75 to $1.00, somewhat according to circumstances and whether or not medicine is conjointly furnished. In the upper end of the county, in the smaller towns and villages or within a quarter of a mile of office, $ .75 is the prevailing strictly local charge. Outside of the towns (country work) and as usually affirmed up to "three or four miles," $1.00 per each visit, including medicines, is charged. Two physicians state going any distance "even up to six miles" for this price. Several aver charging $1.25 for "over three or four miles." In central and lower central districts, a pretty uniform charge of one dollar is made for visits, exceptions in few instances being made, when the distance is over two or four miles, where occasional fee of $1.25 or $1.50, is charged. Two report $1.25 per visit for all out of town calls, up to two or three miles, when an extra charge aggregating $ .25 per additional mile outgoing is made. It is not expressly stated in this locality that lower fees than $1.00 are accepted for ordinary practice, although there is very positive reason to believe that even in central and lower central Bucks County, fees of $ .75 per visit are charged in the smaller towns for near work. However, it is equally evident and demonstrated that rather larger fees are prevalent in this locality than elsewhere in the county.

The most striking, and to the writer the most astounding, admission, however, comes in the report of fees for ordinary, uncomplicated obstetrical work. Out of the whole number submitting reports of general fees obtained, but eighteen specifically relate to this matter, ten of whom are upper end men, the balance from central or lower central districts.

The prices range from five to seven or ten dollars including at least two after visits, and in some instances doubtless more, though not so stated. From these eighteen reports we find the munificent sum of six dollars and thirty-three cents as the average price for the delivery, management and care of an ordinary maternity case. Surely "race suicide" can not be laid at the door of the rural practitioners of Bucks County.

There is a practical unanimity of opinion in the reports received that the rates should be made higher, in no instance lower, some physicians asserting that this is a question more of strictly local agreement, others the opposite view that, unless outside pressure is brought to bear upon local groups of physicians by the adoption of a general schedule, there is little to be hoped.

It is generally agreed that no visit should be made in town or within one mile for less than one dollar, while for one mile or over up to three miles or even four miles the charge be $1.25 inclusive, of course, of ordinary medicines.

Suggestions, where they are made, regarding the fee for ordinary obstetric cases, are generally strongly in favor of the minimum fee of $10.00, inclusive in some cases of two after visits, in other cases the number of after visits to be allowed are not expressed. The suggestion prevails, that in difficult and complicated or necessary instrumental deliveries the general fee should be not less than $15.00. In the reports submitted there are but three instances where an allusion is made as to the subject of night rates. One of these "always charges one and one half times day rates;" two state they "double the day rates." Two or three speak of charging for "consultations and advice" over telephones, and the same number advocate the same in a schedule of fees. Special fees for special work, surgical, gynecological or other sort, are not generally specifically stated.

Consultation fees are uniformly mentioned at $5.00, and there are certain local renunciations of the "lodge doctor" and the advocacy on the part of some of a uniform fee of $5.00 to be demanded in "regular old line life insurance examination work."

It is too much to expect that the day will ever come when patient and doctor will be agreed on the subject of fees. The patient divides the number of dollars he pays by the hours of service he individually has received; the doctor divides his receipts for the day by the hours of medical service he has actually given plus his equipment, his studentship, his relentless servitude.

Edgar Allen Forbes in the *World's Work* for May, 1907, a man who has apparently carefully investigated this question, states that the average income of the country doctor in the United States does not exceed one hundred dollars a month; that a careful inquiry in nine different states had shown that the charges of physicians had not increased one cent in twenty-five years, that the incomes of the people had doubled while the cost of living had increased according to reliable statistics forty per cent. in the same period. The schedule of fees for four states, it is avered, is about as follows: Day visit in town, $1.00, office consultation, $ .50, country visits, $.50 each mile outgoing, obstetrical attendance, $10.00; in five states the charges for visits and office consultations are twice these amounts. He further affirms, what other gentlemen here will fully accord, that "the medical profession at large, does more practical relief work without credit than any other class of men." His servitude is accepted as a matter of course. He has no press agent and "the only member of the community who realizes (and I should say not infrequently shares) the extent of his public service and the smallness of his recompense is the doctor's wife."

The standard of medical education is high set to-day, it is placed there by our own advocacy as well as that positive demand of the public, well expressed in the following clipping of a recent newspaper editorial; "A great deal more is now to be exacted from the family physician than in former times; the various agencies now active for the correction of the apathy and ignorance which would permit the child to grow up like a neglected weed are doing a wonderful work. The physician who pretends to look after the welfare of a family, and never does anything except when he is called in to attend a really sick or bedridden patient is fifty years behind the times, and the family which does not demand an intelligent supervision and examination from the doctor is running a tremendous risk." Not alone to cure the sick and restore the maimed but to preserve and conserve the well, to prevent and abate "the humors of old," the infections of the present,—these are your exactions and your obligations; not only a four year's medical course, with an additional year of postgraduate work, a preliminary educational course which falls not short of a precollegiate career. This is the price of your occupation of to-day, add to that its modern equipment,—its surgical armamentarium even for minor or emergency work, its clinical laboratory association for intricate and positive study of your cases, your drugs and medical supplies, and, finally, your library, your transportation, your telephone, the expectancy of your social position, then when you think you have approximated your actual working capital (think not at all of your hours, your risks) ask yourselves, "Is all this cheap?" or, perhaps better, ask yourselves, "Does your competency assert itself temptingly?"

One of our members pertinently and significantly states, "A physician will usually get what he asks, and will ask what he thinks he is worth." This in a measure is a truism; relatively speaking, the writer believes in it, and while he enjoys the position of being fairly well satisfied with his own position, he is here to assist in any way the appreciation and standardization of medical fees in our midst, and to assist any faltering medical brother for a better hold to the helm of this ship of professional justification. In this question of a fee bill we may as well eliminate at once the credit side of the case. Every doctor does considerable work for nothing. It is to be expected he shall ever exercise his privilege to make his own considerations to his own worthy poor, the afflicted handicapped members of society among whom we all have acquaintances.

So, too, there is no fee bill that can perfectly fit the common day laborer, rearing respectably and honestly his numerous family, and by his side the requiring, affluent citizen. What is needed and what I think is entirely possible is a schedule of guiding fees governing ordinary practices and circumstances, appropriate alike to the citizen, the artisan, the merchant, the manufacturer, farmer and tradesman. The man who makes good wages (whatever his vocation) who lives and dresses as well as you do, who gets his Sundays, holidays, nights and vacations as you do not even contemplate, and who sees more of the lighter vein of life in one month than you do in a year, for all such, I hope in some wise to see it the established practice that no fee for a visit shall be less than $1.00; that country work shall have an added fee of at least twenty-five cents per mile; that no maternity case shall be undertaken for less than $10.00 inclusive of a limited number of after visits; that the rates for night work shall be materially increased over those for day work; that consultations over telephone, where professional advice is solicited and given, shall at least be accorded the same emolument as a regular office consultation. Also, that we shall unite in the demand being broadly made for a five dollar fee in regular old line life insurance examination work; that the lodge doctor be discountenanced, and the "industrial child insurance business" shall not be participated in at all for the prevailing and absurd rates for such practices,—a quarter for an inspection and a quarter for the endorsement of an applicant.

Let us be honorably disposed among ourselves: "avoid that in price which degrades a profession to a trade."

The millennium has not yet come, but physicians can stand together. Let not our patients ever continue to make us fools. True, in some localities, there must be leniency of disposition with our fellows. In places the process of change will be a process of growth. Better to wait awhile than ever to be stunted in the growing! A campaign of education is on—let the light shine and the public in. Let there be no retrenchment and no rebate.

Finally, doctors, lay aside the small things which embitter and perturb our spirits. Let us stand united in our strength, united that our fees may be adequate for the efficiency of true worth, intelligently administered and honorably discharged.

The discussion that followed was very free and varied, all present participating to some extent. Some of the leading thoughts are given below:—

Dr. E. S. Coburn, Plumsteadville, in opening the discussion, said: After listening to the able paper of Dr. Smith I can only say that his ideas are strictly in accord with mine concerning the subject. We surely are doing some of our work at a very low figure. I feel that we should have a regular price throughout the county, and if we attend deserving poor, let us make our charges the same and when we settle our accounts with them, make them a present of one fourth or one half, according to the condition or their ability to pay. I have been better paid in seeing a poor man's grateful looks when I told him to give me seventy-five per cent. of his bill and I would receipt it in full, than the money could if paid in full. I make them understand it is a present and that the regular charges have been made. In this way the deserving poor feel that they are discharging their debts honestly and are retaining their self-respect in the community. People able to pay in full will not think unkindly of us in making a gift to the widow or orphan. A rate of charges for minor surgery should be thoroughly considered. I will do all I can to improve the condition and secure higher prices for our work.

Dr. A. E. Fretz, Sellersville: I heartily concur with the deductions of Dr. Smith, that the physicians of Bucks County are not sufficiently remunerated for their services. The vital question before us is how to change this condition. In my opinion an iron-clad fee bill for the physicians of the entire county is impractical, inasmuch as conditions differ very materially in different localities. I think it a wise plan, however, to discuss these matters and create a sentiment in favor of better fees; but let the physicians of each town or neighborhood where they have everything in common, get together, effect a raise in fees and maintain it.

Dr. G. M. Grim, Ottsville: Everything has materially advanced in price during the past few years, and all salaries except that of the doctor. It appears to me but reasonable that we should also have a proportional increase with others. We too often underrate our own services; our patients rarely value them above our own estimate. Our custom for years has been one dollar for calls outside and fifty cents for office, including medicine. Obstetric fees were five, now are seven dollars, including two visits for normal labor; extra charge for time over several hours or for extra services; all extra visits, the usual fee. Extra charge has lately been made for visits over three miles distant; but as yet, no extra fee for night work. I have reduced night work to a minimum. We agree that an extra fee should be charged. I do not believe in stiff fees where we feel that it would be a burden among the worthy poor. The true mission of the doctor should not be lost sight of; by accepting a minimum fee from the very poor we do not take out of a family all that lightens their weary part through life, but let them feel that we put a certain value to our services, which fact is generally appreciated.

Dr. S. P. Kerns, Philadelphia: When I practiced in Bucks County, I charged for obstetrical cases from seven dollars upward. We should fix a maximum and a minimum rate of charges; families in better circumstances expect to pay more for our services, provided more time is devoted to them; as their standing in the community rather commands it. At a one-dollar fee, and furnishing the medicine required as has been the custom, one never gains sufficient competency. Living, drugs, etc., cost money, and as the purchasing power of one dollar has decreased, the fees should undoubtedly be raised all along the line. Charge the poor a proper fee—they will respect you for upholding the dignity of an honorable profession. If we underrate ourselves, the patients will very quickly add another discount. Deserving charity fees will always arrange themselves; the honest poor will pay something and I never despise their honest efforts.

Dr. J. N. Richards, Fallsington: Judgment is difficult as to what fees to charge the different classes of people. I try to get ten dollars for an obstetrical case, but I take less if the party is poor; in this case I am glad to relieve the poor and often overworked woman. I have refused to attend but two or three women in labor in my thirty-four years of practice and am confident that I have lost nothing by doing so. The poor often pay more promptly than the wealthier and are more grateful. I prefer to see more of obstetrics, because, with our modern clean methods, it has grown so safe and I lose very few patients. In my experience it is scarcely necessary to see our parturient patients oftener than the first two or three days. As for double night fees, I have trained my people to avoid, if at all possible, sending for me at that time. I have not raised my fees for these calls, feeling disposed to be thankful that I was going to see some other man's wife or baby and to relieve them, than to be sending for relief for my own family. To be able to relieve sorrow and pain is often a higher compensation than "filthy lucre," and yet I do not despise the cash at any time. My usual fees are seventy-five cents in town; outside, $1.00, $1.25 and $1.50. Five dollars is not too high for old line life insurance examinations and I demand it.

Dr. A. F. Myers, Blooming Glen: My charge for village calls is seventy-five cents, one dollar or more for calls beyond. My self-respect is maintained by insisting on these figures. No invariable standard can be arbitrarily fixed for the entire county; some flexibility must exist to meet the varying conditions. My practice has not suffered by these rates. The fees should be raised all along the line. The wages of all the various professions and trades have advanced; living expenses are higher, and adversely, the purchasing power of a dollar has diminished. I do my full share of charity work. It is my firm conviction that five dollars should be demanded when making an old line life insurance examination. I will not accept less. All standard companies expect thorough work and will cheerfully pay for it. We must maintain the dignity of our profession; corporations and societies will not.

Dr. R. H. G. Osborne, Morrisville: I have always charged one dollar for ordinary visits about town and half a dollar for office consultation. In rendering my accounts, I charge the full fee, but am ready to take whatever the poorer patient feels he can rightfully pay. By this method the patient is not led to undervalue the services rendered. The fees generally should be increased, taking into consideration the greater cost of living, the increase in wages, and the anxiety and expense incurred by the physician. Five dollars should be the minimum fee for life insurance examinations.

Dr. J. B. Walter, Solebury: In my opinion it will be impossible to conform to hard and fast rules as to fees; and I, personally, can not be bound by any such table of fees as has been proposed. Not one of us can abide by its provisions, mainly because we will be compelled to adapt our charges to the means and deeds of our patients. "The poor ye have always with ye" and, of course, with these we must practice charity. Every practitioner, it seems to me, must determine what is the fair and honest thing for him to do in this matter and in his own community. Of course, no decent man would go into a neighbor's practice and underbid to secure business. I can see no good in adopting a fee bill as long as we are certain not to conform to its requirements. Its adoption would surely result in multitudinous charges of unfairness, duplicity and dishonesty.

Dr. J. E. Scott, Newhope: No arbitrary figures will hold good for an entire county because different rates will depend upon the degree of prosperity of the various locations. In my vicinity, house visits command seventy-five cents in town; one dollar when outside, one and a quarter when two miles distant, and farther in proportion. Obstetrical cases are charged at least ten dollars, even if not always paid; though several of the old doctors hold on to the old custom and do give such attendance for five dollars. For my old line insurance examinations, five dollars is paid for each. The fee of one such company is only three dollars, but my bill to that company is always made out for five dollars and they have never failed to pay me that figure.

Dr. J. B. Carrell, Hatboro: The members of the society should bear in mind this fact: that the one-dollar fee of years ago has today, for various reasons, a purchasing value of not more than sixty cents; and instead of being benefited by our prosperous times we are really financially injured. Our fees should be increased as the purchasing power of the dollar is decreased. Some Bucks County doctors are unjust to themselves. They can not provide for their own and their family's reasonable wants at the existing fees, nor can they equip themselves with the necessities for advanced medical science as they should do, thereby becoming a man of danger instead of being a man of safety in the community. One dollar should be the lowest charge for an out of office visit, and twenty-five cents should be added for every mile over one mile from the office. The lowest obstetrical charge should be ten dollars. The inability to raise your fees, I think, is fanciful; for no honest patient should ask his physician to attend him for a fee unjust to both doctor and patient.

If two thousand paid-for visits are made annually by the average doctor, and one dollar the fee charged, he has two thousand dollars for his work; add twenty-five cents to his fee, and he has five hundred dollars to swell his bank account, and to provide for better equipment and old age. Low fees, bad collections, and bad business methods, are the most frequent reasons for the tottering old doctor working on until he drops in the harness and is buried out of sight and mind. In conclusion, I wish to reiterate that the dignity of the profession and our self-respect are maintained by charging the full fee and then making any reduction deemed proper as a gift to the patient. I urge this not alone for the practitioner in affluent circumstances, but more especially for the young brother in our ranks just starting out on the medical career.

Dr. Arthur Wareham, Yardley: Our location across the Delaware from Trenton, where so numerous a profession holds forth, is responsible for the low rates in insurance examination fees; three dollars for policies of $2500 and less being the rule. Too many men in Trenton are eager to examine at that figure to permit of our raising the rate. Of course this rate is for examinations made in the office only. Our fees for house visits range from seventy-five cents for the poorer to one dollar for those able to pay more. Office fees are fifty cents; we are at present trying to arrange a uniform rate for all physicians.

Dr. L. S. Walton, Jenkintown: One year ago I resigned as examiner from all life and casualty companies that pay less than five dollars for an examination. It is my feeling that one's self-respect should make every practitioner do likewise. In reply to an inquiry, I will add that my obstetrical cases, if uncomplicated, bring me from fifteen to thirty-five dollars, according to the patient's means. My fees for visits in town range from one to five dollars; I receive one and a half dollars a visit for about half of my town work.

Dr. Howard Pursell, Bristol: A growing abuse in this region I find to be lodge practice,—one dollar per year being the total fee paid by each member. How degrading to our profession! Three such "lodges" are working in Bristol. I would be thankful for suggestions to rid the neighborhood of this nuisance.

Dr. A. M. Eaton, Philadelphia, spoke of the serious harm done both the physician and the patient by the growing lodge practice, more particularly in the industrial sections of Philadelphia. He described the results of recent sociologic investigations in Massachusetts, which proved that nonpayment of physician's bills was due largely to the extravagance in living by all classes, buying and paying on the installment plan affording such extravagances, and the physician's bill was always the last to be paid.

Dr. W. C. LeCompte, Bristol: I heartily agree with the remarks on life insurance fees. We must insist on a minimum fee of five dollars on policies above one thousand; and, as the various life companies regard membership in the county society almost a prerequisite for appointment as examiner, it is particularly suitable that this society take some action along the line suggested. The companies very well know that the most capable practitioners are in the county societies. I will add that my minimum charges for house visits in Bristol are one dollar and two dollars for visits outside. Ten dollars is my lowest obstetrical fee.

Dr. F. B. Swartzlander, Doylestown: We had an instance of "lodge practice" in Doylestown, which lasted for over two years. You may be interested in the way in which it was overcome. The physician who was doing this work was a good man and I know that he thoughtlessly went into it in the first place. I refused to meet him in consultation, giving as my reason for not meeting him that he was doing this work and, at the same time that he asked us to meet him as an equal he was slyly entering the homes of some of our patients as a "dollar a year lodge doctor." This conversation caused a slight misunderstanding for the time, but the doctor called at my office later in the day and we had a talk on the subject in which he admitted that he had never looked at it in our way and that the practice was undoubtedly wrong. The doctor was so much in earnest in the matter that he resigned from the lodge the next night. Out of fairness to him, I saw the other men of the town and obtained their promise that they would not go into the work in his place; thus the lodge was unable to carry on its nefarious work. I can recommend the plan to our Bristol brethren.

Dr. Smith offered the tentative table given below. It was unanimously agreed to have the proposed fee bill printed so that a copy might be mailed to each member of the society, and that final action will be taken at the coming meeting.

A Schedule of Fees, governing the rates of charges for ordinary medical practice, within the County of Bucks and proposed for the approval of the Bucks County Medical Society; and, if adopted, to be recommended for the usage of tne members of the same and the consideration and endorsement of all reputable, legalized medical practitioners of the said county or its environs.

OFFICE.

For Office consultations, *per patient*, with or without ordinary *medicines* furnished, fifty cents.

For the furnishing of extra medicine in quantity or expensiveness an additional charge shall be made and become payable.

For Special Dressings, surgical or otherwise, or for special treatment at the office, an additional fee shall be allowed and become payable.

Telephone Messages, soliciting professional advice, shall be accorded the same charge as a regular office consultation.

Night Rates, for office calls or consultations, by telephone or in person, shall be upon the basis of one and a half times or double the usual rates.

PROFESSIONAL VISITS.

Within the limits of a town, borough or village, or within one mile of the physician's office being called, the fee for *one* patient in a noncommunicable disease, requiring only ordinary medicines, as is commonly understood, the minimum fee shall be for every such visit so made one dollar.

COUNTRY VISITS.

Ordinary professional visits, made within the day hours to one patient residing outside of the limits of a town, borough or village, or being at a distance of one mile from the office of the physician called, and not further than two miles or any fraction thereof from the office of the physician so called, shall entitle the physician to a fee of one dollar and twenty-five cents.

For a distance of three miles or any fraction thereof, outgoing one way, an additional fee of twenty-five cents shall become due and payable, and the same amount shall become due and payable for each succeeding mile or fraction thereof so traveled. It is hereby provided that where more than one patient is prescribed for at the time a visit is made within one household an extra fee for each subsequent or other patient shall become due and payable at the same rates governing office fees herein expressed.

NIGHT VISITS.

Where visits are made at night or after the usual hours of retirement and for all such as do not demand more than ordinary time or such as are not considered as special cases requiring special services, the fee shall be double that of the day rates.

OBSTETRICAL.

The minimum fee for the delivery, care, and limited subsequent attention for an ordinary maternity case shall be ten dollars. Difficult, abnormal or complicated labors, requiring instrumental or manual assistance, involving special responsibilities, time or skill, shall entitle the practitioner in charge to a fee of fifteen dollars or more and the same shall become due and payable. The fee for attendance upon a case of miscarriage or abortion involving a tamponade or curetment, shall be the same as those governing the same character of cases at term inclusive of the usual subsequent after attention and care.

COMMUNICABLE DISEASES.

Visits and attendance upon communicable diseases, such as involve embarassment to a physician's usual business, entailing pecuniary losses in the same, and when the interests of the public are to be particularly conserved or safeguarded, are not herein construed as "ordinary professional work or visits" and the same shall be subject to special extra charges as the exigencies and circumstances of the case or cases shall warrant.

SPECIAL.

Surgical, gynecological or other special forms of professional work, whether attended at the office of the physician, the home or other abode of the patient, are not herein construed as "ordinary professional work and visits."

All such cases shall entitle the physician in charge of the same to special and extra rates of charges, governed by the particular skill required and the attending circumstances and exigencies of each particular case. It is hereby provided, however, that the fee for the reduction of any fracture inclusive of the setting of the same shall not be less than five dollars at the office of the physician, and the same for the reduction of any dislocation. For the subsequent visits, care, dressings or attentions necessary in all such special cases here specified, the rates of charge shall entitle the physician to more than the usual rates for the ordinary practices or visits, governed by the exigencies of time, skill and circumstances of the same.

CONSULTATIONS.

Consultations between local physicians, and such as may be within reasonable or convenient riding distance of the case to which called and not involving other than a consultation, shall entitle the physician or physicians so called to a fee of five dollars.

LIFE INSURANCE WORK.

For regular old line life insurance examinations, involving a detailed physical examination of the applicant, together with a detailed report of the applicant's family history, a urinalysis, etc., and soliciting an opinion as to the qualification and character of the risk involved, shall demand, entitle and render payable to the physician making such examination a minimum fee of five dollars.

Dr. LeCompte offered a resolution committing the society to discountenance "lodge practice."

"*Resolved,* That this society disapproves of any of its members making any contract with any lodge, society, firm or company, to attend its members or employés at a lower rate than the minimum fees adopted by this society."

Unanimously adopted.

ANTHONY F. MYERS, Reporter.

ERIE—MAY.

The regular monthly meeting of the Erie County Medical Society was held on Tuesday evening, May 7, 1907, with Dr. Ray presiding, and Dr. C. G. Strickland, secretary *pro tem.* The members in attendance were Drs. Bell, Chidester, Dennis, Dunn, C. F. Heard, Irwin, Kalb, Kern, Palmer, Ray, Roth, Schrade, Shreve, C. G. and D. H. Strickland, Walsh, Washabaugh, and Weibel.

The minutes of the two previous meetings were read and adopted.

The amendment to the by-laws, introduced at a former session by Dr. Ross, governing the payment of dues received from new members during the last three months of the year, was passed on final reading.

Dr. G. W. Schlindwein read a paper on the "Ocular Changes in the Inflammations of the Kidney."

Dr. D. N. Dennis, opening the discussion, emphasized the point that the changes in the eye-ground which are observed during life are only the visible alterations that are occurring in other portions of the body as well. Also, in the renal conditions it is quite as important to examine for the percentage of total solids, urea and indican, as it is to determine the presence or absence of albumin, because the elimination of the other substances named, affords at times a more definite idea of the manner in which the kidneys are performing their work. In many cases of high arterial pressure there is an absence of albumin with a low percentage of solids.

Dr. Dennis then quoted a number of very interesting case histories to illustrate the points brought out in the paper. The first two patients had glycosuria and the ophthalmoscopic changes only showed Gunn's vessels as the earliest alteration in the sclerotic process. He also mentioned several cases with albuminuria, in one of which the patient is still living after five years from the time the typical albuminuric retinitis was first observed. Another patient, a young woman, showed a low grade neuroretinitis which was associated with intestinal autointoxication, and treatment of the latter condition resulted in a rapid and complete cure of the ocular symptoms.

Dr. I. J. Dunn emphasized the symmetrical character of the disease as a very important point in the differential diagnosis from other conditions where the lesion is more apt to be unilateral. Most of the cases observed by him had terminated fatally within one year, many within six months from the time when first observed. His experience with hospital cases has shown a death rate of from thirteen to fifteen per cent. but he was inclined to think that the cases observed in private practice would run lower than these figures. He has found biniodid of mercury, as recommended by Dr. Tyson, of great value in the treatment of nephritis.

A young man came under his notice on November 26, last, on account of failing vision. The refraction shows hypermetropia with 1 D. astigmatism and this correction brought the vision to normal in one eye. The interesting point was that the patient was correct in his conclusion that the use of glasses would improve his vision, but the opthalmoscopic changes, the presence of albumin, low percentage of total solids and scanty urine confirmed the nephritic condition. Dr. Sherwood of Union City had this patient sent to the hospital for dietetic and eliminative treatment with marked improvement for some time. He subsequently made another trip to this city, when he was attacked with a sudden illness and died on April 16.

The unusual refractive error, entire relief from headaches with mydriatics, and no other symptoms with the marked ocular changes were quite interesting.

Dr. O. M. Shreve said that in England the double chlorid of gold and sodium was used quite extensively in these renal conditions, but he has not been able to come to any definite conclusion as to the value of the drug. As to the prognosis, he thought it quite important to remember that the investigations of Bull proved that in every case of albuminuric retinitis the patient would be dead before the end of five years. He observed in one case a loss of accommodation as the only ocular symptom. The patient was a woman of 35 years, had albuminuria and required 1 D. in addition to her distant correction to give any degree of comfort for reading.

Dr. G. B. Kalb, on the question of the kidney in pregnancy, thought that we are dealing with two forms of toxemia, one expresses itself in the persistent nausea and vomiting, the other in the form of uremia; that in the former type it is quite probable that the liver is at fault, while those cases classed as uremic have impairment of renal function. It must also be remembered that, when the liver does not properly perform its work, these excrementitious products are presented to the kidney for elimination and then set up an inflammatory process in that organ.

He quoted the report of the investigations conducted at the Johns Hopkins Hospital where albumin was found in at least fifty per cent. of pregnant women, while seven per cent. had large percentages of albumin with casts, and in this latter class the symptoms of uremia and eclampsia were present in a marked degree. He thought that the total solids should be determined for twenty-four hours, and, if this is subnormal, then to determine the percentage of urea. If toxemic symptoms supervene, then exact examinations should be made at frequent intervals. Also that such patients should be promptly placed on restricted diet and kept quiet. If this course, with eliminative treatment, does not produce effects, premature labor should be induced, as these patients are otherwise lost.

Dr. A. H. Roth said that in septic conditions of the kidneys from ascending infections the opthalmologist never reports typical albuminuric retinitis, but usually edema of the retina with hemorrhages, probably because the nephritic condition develops so rapidly.

Dr. C. G. Strickland cited reports of recent investigations of eclampsia and uremia in pregnancy without any trace of albumin, and autopsies showed normal condition of the kidney. Of course there are cases with undoubted nephritis, both acute and chronic but it is well to remember that the changes are not always to be found there, but that the fault may be due to other organs, such as the liver, thyroid, etc. The similarity of the changes observed in the liver in gestational toxemia to those observed from inhalations of anesthetics should also be considered. . Williams lays a great deal of stress on the increase in the quantity of ammonia in the urine, the normal amount being given at three to five per cent.; that ten per cent. is a dangerous margin, while twenty per cent. is always fatal.

Dr. D. H. Strickland said that heretofore when albumin was found in the urine of pregnant women, no further search was made for the cause of eclampsia, but, if we are to conclude that the cause of pernicious vomiting is different from the cause of eclampsia, we must admit that we are still quite in the dark as to the correct etiology. The recent views which attribute the changes primarily to the liver and the renal condition as a secondary change is an entirely different theory from that accepted formerly. The studies made by Williams on the elimination of ammonia form a strong argument against the conclusion that the kidney alone is responsible. Pressure from the pregnant uterus on the renal veins does not account for eclampsia, because the convulsions may come on after this pressure has been entirely relieved by the expulsion of the fetus from the uterus.

Dr. Heard said that in his experience more importance should be attached to the quantity of total solids in the urine than upon the percentage of urea, because there is no check on the amount of proteids ingested. Indican is a very good indication of the amount of intestinal decomposition and the relief obtained by proper treatment directed to that organ often gives surprising results in local ocular conditions.

The presence of albumin does not give much information, because we see patients, with albuminuria as the only symptom, who live for many years and cause a great deal of worry to the physician. Associated with other definite symptoms, however, it must receive due consideration.

G. William Schlindwein, Reporter.

WASHINGTON—May.

The regular meeting of the Washington County Medical Society was held at Donora, May 14, in the Donora Club Hall. The physicians of Donora entertained the society at their excellent hotels, and after the dinner a vote of thanks was extended to the local physicians. Donora is a town of ten thousand inhabitants and is only ten years old. Its physicians, who are all young, active men, are equally progressive.

Dr. William John L. McCullough of Washington was elected to membership in the society. This raises our membership to one hundred and twelve.

Dr. Theodore Diller of Pittsburg was present by invitation and gave an instructive talk on "A Few Points on Diagnosis and Treatment of Nervous Diseases." He said that too many patients are going the round of doctors getting nothing but treatment, when they need diagnosis: not just naming it, but getting at the cause. Study each patient (the Doctor objects to calling them cases), the mental, physical and every phase of the patient. Advise work for some, play for others, seriousness for some and humor for others, but seek the best for the individual patient. Medicine is not everything; in fact, it is a small part of the treatment. Massage, if used, should always be done under the eye of the physician, as masseurs are frequently disposed to advise. Electricity is least of all beneficial except for the psychopathic effect. By all means keep from making "drug fiends" of your patients. Magnesium sulphate and magnesium citrate with cascara sagrada are most used of all drugs. A vote of thanks was given Dr. Diller.

As the balance of the program was long, it was postponed to a future meeting.

John B. Donaldson, Reporter.

He cures most in whom most have the greatest confidence.—Osler.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X. No. 10.

Athens, July, 1907.

Subscription: $2.00 Per Year.

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Next Annual Session will be held in Reading, September 23-26, 1907.

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Next Annual Session, Chicago, 1908.

Original Articles.

THE THYROIDS AND PARATHYROIDS; THEIR RELATIONS, STRUCTURE, PHYSIOLOGY AND CHEMISTRY.

BY ALLEN J. SMITH, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It is a matter of comparatively recent history that special attention has been directed to these organs, and, in fact, that the parathyroids have come to be regarded as special organs; and much that has been written in the earlier years of modern study of the thyroid and parathyroids is necessarily confused and unsuited for careful comparative and statistical consideration because of the failure of recognition of the distinction, both structurally and physiologically, between these parts.

Historical Reference to the Thyroid Gland to Time of Recent Advances in Our Knowledge.[1] Contributions of value to our knowledge of the thyroid gland from a morphological standpoint date well back into antiquity, at least to Galen, if not to earlier writers; and its importance as the site of goiterous enlargement was well understood of old. The prevailing gross morphological descriptions of the organ have followed, with little change, that of Haller, written in 1765. The present interest in this structure may, however, be said to have taken its inception in the studies on myxedema, beginning about 1874 with the work of Gull (*Trans. Clinical Soc. of London,* 1874), Ord (*Med.-Chir. Trans.,* London, 1878, Vol. XLIII. 2d Series, p. 57), and other writers. It is true that as early as 1858 Schiff (*Untersuchung über Zuckerbildung* , Wurzburg, 1859) had, in the course of his experiments upon dogs, noted that the removal of the thyroid was followed by a rapidly fatal end; and scattered clinical records of even earlier date existed which suggested strongly the highly important rôle of the thyroid, as the description by Curling (*Med.-Chir. Trans.,* London, 1850; Vol. XXXIII. p. 303) of two cases of absence of the thyroid associated with defective mental development and the existence of symmetrical overgrowth of the fat tissue at the sides of the neck (cretinism). However, such records were looked upon rather as mere oddities; and Schiff, too, in this earlier work was concerned with another problem, his thyroid excisions entering into his work as incidental features, and he did not prosecute his investigations in connection with the thyroid until the latter part of the past century, after general interest had been excited by various clinicians and experimentalists in the matter of the part played by the thyroid in myxedema and allied conditions.

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[1] For an interesting historical sketch of the thyroid gland cf. Cullen, *Edinburgh Med. Jour.*, Dec., 1891.

Among the older writers the views as to the function of the organ varied widely, some regarding it as functionless, at least in adult life, others as having some glandular function connected with the moistening or lubrication of the laryngeal orifice and membrane (Vesalius). Even comparatively lately it was looked upon as acting as a sort of side reservoir to the cervical arteries in regulation of the blood supply to the brain. So, too, it has been held, and that, too, in a restricted sense quite recently, as hematopoietic. Its known relation to the thyroglossal duct, which is obliterated at a comparatively early period of fetal life, led to the belief that, whatever its importance in extrauterine life, in the later experience of the individual it is of relative insignificance, save, of course, as the site of various pathological changes.

Gull (*loc. cit.*) in 1874 referred to it the origin of the myxedematous state, describing this condition as "a cretinoid state supervening in adult life in women"; Ord (*loc. cit.*) in 1878 first applied the name "myxedema" to this condition and corroborated Gull in the view that it is essentially connected with thyroid fault. In 1882 Reverdin (*Rev. de la Suisse Rom.,* Geneva, 1882 and 1883, *2ieme et 3ieme Ann.*) described the symptoms following the removal of the thyroid for goiter, speaking of the complex as one of "operative myxedema," Kocher in 1883 (*Arch. f. klin. Chirurg.,* Berlin, 1883; Bd. 29, pp. 254, 279, 285) pointed out the same features and drew attention to the fact that such results occur in the most marked degree in the young, and that they are almost absent in the aged.

Further reference to the development of studies may from this point be postponed until discussion of the more recent advances.

Recognition of Parathyroids as Special Organs. The parathyroid glands had been practically overlooked or if observed had been regarded as mere lymphoid nodules ("*cumuli adenoidi,*" Virchow) or as accessory thyroid lobules, until in 1880 when they were recognized as special glandular organs by Sandström (*Schmidt's Jahrbücher;* Bd. 187, 1880) and described by him under the caption, "*Ueber eine neue Druse beim Menschen u. bei verschiedenen Saugethieren.*" Sandström noted the existence of the two parathyroids on each side in man; but, overlooking the internal parathyroid, ascribed but one on each side to the horse, cat and dog. He looked upon these bodies as probably embryonal in nature, capable of development in cases of necessity into thyroid tissue and assuming the characteristics of the latter. This same view was taken by Baker (*Philosophical Trans. Royal Society,* London, 1881), who shortly thereafter confirmed Sandström's observations as to the existence of these bodies; and a few years later a similar view was expressed by Horsley (*Brit. Med. Jour.,* 1885), who described them as "embryonal nodules."

Dominated by this idea that the parathyroids were really only embryonal thyroid tissue, and of importance only in that they might, in case of need, develop so as to assume the structure and compensate for the loss of function of the thyroid lobes, investigators and writers failed to take into proper account these bodies in their studies of the thyroid for a number of years; and much of the work performed before the latter part of the last decade of the past century is seriously faulty because of this failure, and can only be interpreted accordingly. In 1891 Zucarro (*Lond. Med. Recorder,* May, 1891) claimed to have discovered in dogs certain lobules of a different structure from that of the thyroid proper, one in front and two behind the thyroid; these evidently being parathyroid glands and related by the writer with Horsley's "embryonal nodules." Zucarro definitely claimed that if these were permitted to remain in case of experimental thyroidectomy the operation might be performed without the usual fatal results, but that if ablated along with the thyroid the animal would invariably soon die. About the same time Gley (*La Semaine Med.,* Dec. 16, 1891) described two small bodies in rabbits (evidently the external parathyroids), one on each side, lying about 0.5 centimeter below the thyroid lobe on the carotid sheath, these having a structure analogous to that of the embryonal thyroid. The writer stated that if these be not extirpated, thyroidectomy might be performed without the occurrence of cachexia, and that later they would develop and take on the characteristics of thyroid tissue. He claimed, too, that if these glandules were removed several months subsequent to thyroidectomy the acute symptoms of total thyroidectomy would not ensue, and presumed, therefore, that in the meanwhile compensatory assumption of function had occurred in other structures of the system. About this same time Chantmesse and Rene Marie (*Le Bull. Med.,* March 19, 1892) described two groups of glandules in man, one each at the point of entrance of the superior and inferior thyroid arteries into the thyroid, confirming the statements of Sandström, and pointing out that by intracapsular operation in thyroidectomy in man these bodies, denominated *parathyroid glands,* will not be disturbed. They, too, expressed the idea that these structures are of embryonic type and are capable of developing into adult thyroid tissue in case of necessity. In 1892 Hofmeister (*Gaz. Méd. de Paris,* Sept. 24, 1892), with a view of confirming Gley's suggestions, removed the thyroid from young rabbits (five or six months old) without disturbing the external parathyroids described by Gley; but stated that, at least in young animals, from his findings he had not been able to regard these bodies as completely compensatory for the loss of the thyroid (thus introducing the idea that they are not essentially embryonal thyroid tissues as was previously supposed).

In 1895 Kohn (*Arch. f. mik. Anat.*, 1895, Bd. 44; 1896, Bd. 48) made the first definite differentiation of the parathyroids from the thyroid as at present understood, describing the former structures as absolutely distinct from the thyroid both morphologically and functionally, and correcting the former view of the existence of but a single parathyroid on each side in dogs, rabbits and other animals. In 1896 Horsley (*Brit. Med. Jour.*, Dec. 5, 1896) pointed out from embryological studies the development of the parathyroids from the hypoblast at a period somewhat antedating the differentiation of the thyroid itself. Perhaps with the critical review of D. A. Welsh (*Jour. of Anat. and Phys.*, 1897-98; also *Jour. of Pathol. and Bacteriol.*, 1898) the entire differentiation of the parathyroids from the thyroid may be regarded as determined; although even since this publication there has been more or less persistence of the former idea that the parathyroids are embryonal thyroid lobules. Welsh insists that this embryonal character does not obtain, that the parathyroids are invariably and persistently different from the thyroid in structure and function, and that they are differentiated in embryonal development of the individual at an earlier period than the thyroid itself; and voices the view as to the specific nature of these glandules which prevails to-day.

Gross Anatomy of Thyroid and Parathyroids.

a. The thyroid was originally described as a pair (bilateral) of glands until the time of Morgagni, who established the present custom of regarding it as a single (bilobed or trilobed) organ. It is usually accepted as arising from three sources embryologically, the lateral lobes arising from the hypoblast of the fourth branchial cleft, one on each side, each as a closed vesicle growing ventrally, and the median lobe arising from a diverticulum of the pharynx between the first and second arches which grows into the thyroglossal duct. Some divergence of opinion exists (cf. Kanthack, *Jour. of Anat. and Physiol.*, Vol. XXV. Pt. II. p. 155) as to whether this median portion develops from the tissue of the duct and is therefore of pharyngeal derivation, or whether after fusion of the lateral lobes the isthmus-tissue merely develops along the remnants of the duct. The thyroglossal duct begins to disappear about the eighth week, its glossal end being represented in later life by the *foramen cecum* of the tongue; and it is at this period that the isthmus is formed and the pyramid develops (cf. Wolfer, *Entwicklung u. Bau der Schilddrüse*, Reimer, 1880; Dohrn, *Mittheilung. der Zool. Station in Neapel*, 1886; His, *Arch. f. Anat. u. Physiol.*, 1891, p.21).

In the adult human being the gland varies considerably in size and weight without manifestation of any abnormality, sometimes attaining a weight of sixty grams and on the contrary sometimes weighing but twenty grams, or even a little less. It is relatively smaller in females than in males, but in the former is subject to moderate enlargement during menstruation and pregnancy. In both sexes it is decidedly smaller after the middle period of life than earlier. There is reason for the belief, too, that in different parts of the world, and even in different limited localities of habitation, there is special variation. Thus Virchow's averages of weight ranged from thirty to forty grams; Wells', in Chicago (limited to adults), from twenty to forty-five grams (Richardson). No fixed proportion to the body weight can well be approximated, the determined figures having a comparatively wide range.

The gland consists of two lateral, somewhat pyriform, lobes, connected, toward the lower poles as a rule, by an isthmus; and in from forty to sixty per cent. of individuals from the latter there arises, extending anteriorly toward the hyoid bone, a more or less well marked median lobe of somewhat pyramidal shape, which is spoken of as the pyramid. Exceptionally considerable variation may exist, especially in connection with this pyramidal lobe. As indicated, it is often absent entirely; and it varies decidedly in size in different persons. Occasionally the isthmus is even missing, with the thyroid lobes as distinct bilateral organs. Accessory thyroids are not infrequent, mainly as small separate nodules or lobules in close relation with the thyroid proper, but sometimes distinctly separated from the thyroid mass and found perhaps as high as the tongue itself (along the more or less obliterated thyroglossal duct), or situated below the usual thyroid level, as along the carotids and even well within the chest. Laterally displaced thyroid tissues, or growths showing thyroid structure, are occasionally found as far out as the neighborhood of the parotid or ear. Normally in the human being the organ lies upon the anterior and lateral aspects of the trachea, the posterior surface having a concave shape adapted to the cylindrical outline of the windpipe and the lateral configuration of the lower part of the larynx. The lower border of the lateral lobes corresponds with the fifth or sixth tracheal ring, from which level these lobes extend over the lower portion of the thyroid cartilages of the larynx; the lower portion of each lobe being rounded, the upper more or less pointed. The isthmus connecting these lateral lobes generally covers the anterior surface of the trachea from about the second to the fifth tracheal rings; and when the pyramid is present it extends from the isthmus toward the head perhaps as far as the hyoid bone, or may end at any level short of this. The main attachment of the organ is to the trachea and larynx by a loose connective tissue union; but it is also attached loosely to the surrounding muscles and other cervical structures, as the carotids which pass in close relation behind its lateral lobes. Sebileau (*Bull. de la Soc. Anat.*, April, 1888) would dignify its attachments as definite ligaments, although scarcely of the density and bulk to merit such denomination; he thus recognizes two internal lateral ligaments interwoven with the capsule where the latter is attached to the trachea, six lateral ligaments extending into and lost in the transverse cervical aponeurosis along the lines of the superior and inferior thyroid arteries and the middle thyroid vein, and superior and median ligaments continuous with the capsule of the gland, extending from the superior margin to be attached to the thyroid and cricoid cartilages.

The thyroid blood supply, its vessels characteristically large and tortuous and with unusual anastomotic intercommunications (a feature made much of by those who looked upon the organ as of importance hematopoietically, and by those who held it as a reservoir regulative for the cerebral circulation), is received from the superior and inferior thyroid arteries and sometimes by an additional vessel (*thyroidea ima*) directly from the aortic arch. The venous drainage likewise forms a marked plexus within and upon the gland, from which pass the superior, middle and inferior thyroid veins, the first and second emptying into the internal jugulars; the inferior, after forming a special plexus on the anterior surface of the trachea, joining the innominate.

In a special study of malignant struma, Ehrhardt (*Beiträge zur klin. Chir.*, Bd. XXXI. H. 1) has given particular attention to the lymph drainage of the organ. He finds no lymphatic communications between the lateral lobes. The middle portion of the organ drains into the lymphatics between the larynx and esophagus; the chief lymph channels of the lateral lobes pass laterally and posteriorly, draining into the deep chain of cervical lymphatics and these into the axillary and mediastinal chains. The superior portions of the lateral lobes communicate with the submaxillary and sublingual glands and the inferior portion with the mediastinal. The communications are numerous and well marked, in correspondence with the fullness of hemic supply and drainage.

The nervous supply is derived from the middle and inferior cervical sympathetic ganglia and the nerve trunks enter the gland and ramify in it with the arterial supply.

The organ is invested in a fairly dense connective tissue capsule, is of a firm elastic consistency, and on section exudes a slightly viscid, yellowish fluid and the cut surface shows innumerable fine yellowish-brown shining points, given by the colloid contents of the thyroid follicles.

b. The parathyroid glands, as above stated, were originally regarded as lymphoid nodules or as accessory thyroid lobules, and as such were practically neglected in descriptive anatomical writings until in recent years. In man they usually occur as extra-thyroid bodies, loosely attached to the thyroid capsule near the external margin of the posterior surface of the lateral lobes, close to the carotid arteries, one near the upper pole, close to the entrance of the superior thyroid artery, and a second toward the lower pole, near the entrance of the inferior thyroid artery, of each lateral lobe. These positions, however, are by no means invariable. Exceptionally in man one or more of the parathyroids may be embedded in the thyroid lobe, as is normal in many of the lower animals. It was this fact of the internal situation of a pair of the parathyroids in many lower animals which gave rise to the confusion of earlier descriptions, as that of Sandström, as to their number in man and animals. Sometimes in human beings they may be found half embedded in the thyroid lobe and hence very adherent, instead of lying distinctly upon the external surface of the capsule. Or they may be attached rather to the carotid sheath, and at times may be found separated by distances of from a few millimeters to a centimeter or more from the thyroid. Accessory parathyroids in man have not been described, as far as the writer's knowledge extends; but in the lower animals (as in dogs, mentioned by Carter, Alvarenga Prize Essay of the College of Physicians of Philadelphia, 1903, and by Halstead) they have been noted. For example, Carter has found an accessory parathyroid on the aortic arch in a dog upon which his total thyroidectomy (done at several operations, at intervals) failed to produce the usual symptoms and prompt fatal end; and this writer with much justice urges that careful search be invariably made in all such apparently refractory instances, as he believes the existence of accessory parathyroids may explain many experimental results which at first thought are looked upon as opposing our existing beliefs as to the importance and probable function of these glandules.

They vary considerably in size in different individuals and bear no constant relation in size or weight to the thyroid (Carter) or to the body weight of the man or animal. They are usually of a flattened, ovoid shape, but may be more or less irregular, and exceptionally may exist as more or less divided bodies or as two distinct bodies, instead of one, at each of the sites indicated. They are of a yellowish-red color, nearly like the internal color of the thyroid, but contrast somewhat with the pale tint of the capsule of the latter and do not have the elasticity of thyroid tissue. As a rule they are about four or five millimeters in length, but may be no more than half this measurement or may exceed double this size. They are invariably invested by their own fibrous capsule, of course of thinner and more delicate character than that of the thyroid; and even when found as internal parathyroids (within the substance of the thyroid lobe) are separated from the thyroid tissue by this investment. Their vascular and lymphatic relations are, in case of glandules in their normal positions, intimate with the hemic and lymphatic circulations of the thyroid.

Histology of the Thyroid Gland. The thyroid is invested by a well marked fibrous connective tissue capsule in which may be recognized an outer loose layer continuous with the fibrous attachments of the gland to the surrounding structures, and a thin inner layer, practically continuous with the fibrous stroma of the gland parenchyma. Definite septa or trabeculæ are not given off into the interior to divide the latter into lobular parts, although along the larger vessels the fibrous tissue of the capsule extends into the organ in fairly marked perivascular bands with which the various interfollicular fibrous septa are continuous. In this fibrous framework the blood vessels, numerous, comparatively large and tortuous, are distributed (Flint, *Johns Hopkins Hosp. Bull.*, Feb., 1903). Numerous endothelial-lined clefts and spaces, the lymph spaces and channels of the organ, are met in this fibrous stroma, and not infrequently within these may be detected fragments and globules of colloid material. The bulk of the tissue as seen in section is made up of follicles, for the most part of rounded shape more or less modified by mutual pressure; but exceptionally tubule-like follicles, which may even appear somewhat branched, are to be found. These follicles vary in size from minute structures to perhaps two millimeters in diameter. They are usually closely related to each other, with thin intervening septa of the fibrous stroma; and while their number is not uniform in all parts of the organ, they are not collected into definite groups suggesting a lobular arrangement. Such lobular arrangement has been sought to be established by Defaucamberge (*Rev. des Sci. Méd.*, July, 1889) who held the thyroid to be really a racemose gland made up of a series of primitive lobules, with secondary lobules made up of follicles or acini, and these intercommunicating. However, the prevailing opinion is that each follicle is itself a primitive unit and that there is no intercommunication, each being an entirely closed saccule; this view being arrived at after careful study of individual and serial sections, by wax reconstructions and by observation of thick sections cleared in glycerin and examined by the stereoscopic microscope (Flint, *Johns Hopkins Hosp. Bull.*, Feb., 1903; Streiff, *Arch. f. mik. Anat.*, LXVIII.; Biondi, *Berlin. klin. Wochenschr.*, Nov. 19, 1888; Langendorff. *Arch. f. Anat. u. Physiol.*, *Physiol. Abt.*, p. 219, 1888; Zielenska, *Schmidt's Jahrbücher*, June, 1894). These follicles are lined normally by a single layer of epithelial cells placed upon a definite basement membrane, and are occupied as a rule by a more or less homogeneous, transparent, yellowish colloid material of a rather firm gelatinous consistency and taking a brilliant eosin tint with the common hematoxylin and eosin combination of stains. The lining epithelium is typically of cuboidal shape, each cell possessing a small, deeply chromatic nucleus nearly centrally placed. Langendorff (*Arch. f. Anat. u. Physiologie*, *Physiol. Abt.*, p. 219, 1889) recognizes two types of cells, the ordinary cuboidal cells which he speaks of as the chief cells, and another form, much less numerous and occurring here and there in the midst of the chief cells, often smaller than the latter, staining somewhat differently and frequently containing granules or globules which he regards as colloid. These, he believes, are particularly concerned in colloid formation, and he therefore denominates them colloid cells. It is doubtful, however, whether this differentiation is justified, as such cells may well represent mere functional modifications of the other cells, in which, moreover, globules are not infrequently met of a colloid or precolloid material. In the smaller follicles, and, too, in young thyroids more or less generally, the cells are apt to be smaller and their nuclei relatively larger than in the ordinary type; and in thyroids from which a portion has been removed, so that the remainder is undergoing hypertrophy, it is common to find cells of a larger and more columnar type. In the ordinary gland, moreover, with the accumulation of colloid in the follicles, the cells of the lining (apparently from pressure influences) are apt to become progressively lower until they are practically flat cells; and they may even disappear altogether.

Outside the follicles in the fibrous stroma one may now and again encounter isolated epithelioid cells or small groups of such cells, the "interstitial epithelium," which are regarded as structural elements capable of giving origin to new follicles. True regeneration in case of loss of glandular structure is possible as in other glandular organs (Ribbert, *Virchow's Archiv*, July, 1889).

The colloid contents of the follicles has been usually regarded as a true secretory product of the epithelial lining, although it has been believed also that the cells may themselves be practically completely converted into the same material and contribute to the intrafollicular collection (Hürthle, *Journal of Laryngology*, July, 1894). Whether as formed it is at once a material of the character of ordinary colloid is, however, not entirely certain; and it can not be held as certainly fixed whether it is directly of essential utility to the rest of the body and is withdrawn and used as such, or whether it requires further change before it is taken up and utilized. By some it is regarded rather as a waste than a material of further value to the economy, and its presence in the thyroid as a mere accumulation failing of disintegration before its final removal. The more common view has been that it is a true secretion and of further use; this view being based up varying amounts found in the follicles at different periods of life, notably its diminution with age, the evident value of the colloid collected and extracted for therapeutic purposes, and certain evidences of its transmission from the gland. Pilliet (*Bull. de la Soc. Anat.*, Paris, June 20, 1890), in describing the histology of the gland in the aged, notes the acini as fewer and smaller and more like the gland of the fetus than in case of the gland of middle age. (This author also calls attention to the existence in the thyroids of the old of epithelial duct-like tubules in the midst of the structure; these are filled with colloid and suggest to his mind excretory tubules. To the writer's mind, however, they are probably no more than distorted follicles, certain irregularity in shape not being at all uncommon.) As above stated, the follicles are apparently entirely closed saccules; although in event of further utilization the colloid must, of course, have some route of removal and dissemination. In the absence of visible outlet it may naturally be presumed that the substance may be taken up either by the blood or by the lymph, provided it be in some way rendered more fluid and diffusible. It is possible that the latter change does take place and it may be suggested that possibly this is the significance of the clear, colorless droplets which are so commonly seen about the larger mass of colloid in the filled follicle; but no definite knowledge is possessed in this relation. Biondi, in 1888 (*Berlin. klin. Wochensch.*, Nov. 19, 1888), stated after histologic study as his belief that the colloid as it accumulates in the follicles exerts pressure influences upon the lining epithelial cells and causes these to progressively diminish in size until at one point or another they disappear by atrophy, and that at such a denuded place the colloid eventually breaks into the lymph spaces of the stroma; and that he was able to demonstrate its presence within these spaces and chan- nels sometimes completely packing them. The colloid thus escaped, Biondi suggested that from some of the remaining lining cells of the collapsed follicle a number of new follicles may be formed and in turn go through the same changes. Recognition of colloid in the lymph spaces within the gland, in its capsular lymphatics and in the lymphatics of the neck close to the thyroid, has also been recorded by a number of other writers (Pisente e Viola, *Neurol. Centralbl.*, Sept. 15, 1890; Langendorff, *loc. cit.*, also in *Med. Bulletin*, Nov., 1891; Zielenska, *loc. cit.; et al.*), although not all accept unreservedly Biondi's explanation of the mode of access of the colloid to the lymph passages and its presence in this situation as more than an accident.

That the colloid is a mere waste material and its presence in the follicles the result of progressive refuse accumulation (Notkine, *Wien. med. Wochensch.*, Nos. 19, 20, 1905) is contradicted by the possibility of extraction of an active principle of therapeutic value, and the idea that were this true the glands of the aged should be invariably loaded with the material to such degree that colloid goiter would be of far more extensive occurrence than is actually the case. That it is not the immediately available secretion of the gland, however, is strongly suggested by the physical characteristics of the colloid, its relative insolubility, and unfitness for ready absorption. The fact that colloid is met in other parts of the body, as the hypophysis, ovary, and elsewhere exceptionally, is suggestive that it is not a specific product of the thyroid in the condition in which it is found; although this argument is really of but little value since it is possible that other organs may act in a compensatory fashion in its production, and, too, the identity of colloids of other than thyroid origin with that in the gland in question has never been established. It is not at all impossible that the material may have the same variability as exists among the different mucins met in various situations of the body. The frequency of the association of actual hemorrhage or of marked congestion about foci of colloid is suggestive that perhaps the colloid is the result of a combination of some of the iron free hemic constituents with some mucinous or allied substance. This is further suggested by the occurrence of colloid in the richly mucinous subcutaneous connective tissue of such animals as snakes in the site of old lesions of various types, as about old parasites; the absence of glands from such positions eliminating the question of its glandular secretory production. The writer has attempted, by providing under sterile conditions and in body warmth, to produce the characteristics of colloid by making various mixtures of different mucins and blood and blood-coloring matter; but the results, while in no wise discouraging, have not been of a degree of success warranting positive declaration of any sort.

It seems not unlikely, however, inasmuch as the appearance of excess of colloid in the thyroid is clearly associated with pathological conditions, and even more so that its occurrence elsewhere is in company with evidence of local disease, that we are justified in not regarding the substance as representing the true and normal secretion of the gland, and that while in its ordinary appearance it is not wholly inutile it is probable that it requires some special further intervention to so convert it that it may be easily absorbed and disseminated. The writer looks upon its occurrence in the lymph spaces in solid or semisolid form as above noted as being essentially accidental and faulty; and believes that the true and unchanged secretion is of more fluid consistency, probably not colored as is ordinary colloid, and probably not responding to the same staining reactions. Such a secretion is probably removed by the lymphatics or may be partly or wholly removed by the blood. That the lymph of the thyroid is not ordinarily filled to a notable degree with colloid is suggested by the observation of Poncet and Jaboulay (*Le Bull. Méd.*, Feb. 7, 1894) that, after exposure of the thyroid in exothyropexy, droplets of a clear moisture, presumably fluid lymph, collect over the surface of the gland, remaining abundant for several days. Colloid in its known form is not seen in the blood vessels of the gland. It is in harmony with this idea, too, that in the follicles of thyroids in a state of regenerative hypertrophy after partial ablation there is to be seen a colorless, apparently less viscid and more characteristically mucus-similating material, presumably the product of the hypertrophied and more active lining cells of the acini. The writer is disposed to regard as of similar nature at least some of the apparent droplets (interpreted sometimes as vacuoles resulting from shrinkage of the colloid from reagents) met at the borders of the yellow colloid matter in ordinary thyroids and in goiters as well as many of the more minute droplets visible in the cells lining the acini; and is confident that the only evidence of change he has observed in the completed colloid of the thyroid and elsewhere have indicated rather a degenerative and necrotic alteration (granular and fatty changes, calcification) than one of solution fitting the material for absorption.

Histology of the Parathyroids. In the parathyroid a totally different structure is met. The gland is invested by a thin and comparatively dense connective tissue capsule, from the deeper surface of which occasional septa enter the interior of the organ, dividing it into irregular portions, the larger blood vessels traversing these septa in their distribution. Fat cells are frequently, especially in the adult human thyroid, met along the course of these septa; this, possibly, is merely the result of replacement by adipose tissue of elements which in some way or other have disappeared. A large number of capillaries arise from the vessels in these septa and form an intricate series of ramifications and anastomoses, these supported by delicate prolongations of the fibrous stroma. Surrounding these vessels as interlacing perivascular columns, and forming small islets, are placed the cells of the organ, the arrangement suggesting the structure of the anterior moiety of the hypophysis cerebri or that of the suprarenal gland. Normally there are no appearances of enclosed spaces or acini or of tubular arrangement; in the hypertrophy met in connection with the removal of the thyroid lobes (Carter, Alvarenga Prize Essay of College of Physicians of Philadelphia, 1903) spaces are, however, evident, apparently intercommunicating, the idea of a cell-covered, branching and anastomosing series of vascular connective tissue cords ramifying through a common space being given. There are found two types of cells. The bulk of these elements are small epithelial cells of polyhedral shape, with a small protoplasmic body and a central, deeply chromatic (but with moderate openness of the chromatin network) nucleus. The second form, much less common and sometimes not observed, includes a number of somewhat larger epithelioid elements, their protoplasm somewhat larger than in the usual cells and containing a number of fine oxyphilic granules, and the nucleus small and deeply stained. Colloid is not seen in the parathyroid, although in the spaces of hypertrophied glands a colorless, mucinoid matter may be found. The older idea of the lymphoid nature of these organs can be well appreciated from the fact that in many of the lower animals, notably dogs, the cells are small and not unlike lymphocytes, although their epithelial character becomes quite apparent in the parathyroids of man; but the arrangement of the cells in perivascular columns, anastomosing and branching and in special perivascular groups, is quite definitive.

Physiology of the Thyroid and Parathyroids. At the inception it should be pointed out that to the present time of necessity a sharp distinction between the functional activities of the thyroid and the parathyroids is impossible, and there remains much to be accomplished before positive assertions can be made, which will entirely and finally distinguish between these organs in a physiological sense. Much of the work which has thus far been carried on is confused and more or less uncertain of interpretation because, owing to their close topographical relations with the thyroid, the older experimentalists probably often removed the parathyroids along with the thyroid in their operations of thyroidectomy; and even at present there is more than a trivial chance, in case of failure to produce the usual effects of parathyroidectomy, that, unless extreme care be taken at the necropsy of the experiment animal to discover the existence of aberrant parathyroid nodules, the result of the study may be rendered of little value because of the possibility of the existence of some such overlooked glandules (cf. Carter, *loc. cit.*). Nor is it clear to what extent vicarious or compensatory thyroid, and perhaps parathyroid, function may be assumed by other structures of the body, as the hypophysis cerebri.

For lack of space the older surmises as to the thyroid as functionless, as a mere structural addition to the body to give rotund symmetry to the neck, as a circulatory reservoir to maintain evenness of circulation to the brain, as productive of a lubricant for the larynx, etc., may be here passed by without further comment.

Schiff's early experiments in 1856 in thyroidectomy in dogs (*loc. cit.*) brought forward the fact that the removal of the thyroid (and the then unknown parathyroids) was in some way fatal to the experiment animals, and the clinical and the anatomical studies in cretinism and myxedema (*vide supra*) early led to the idea of the importance of the thyroid in growth and metabolism and in the maintenance of general health and of mental and nervous efficiency. Popularly, too, it had long been supposed that some relation existed between the thyroid and the sexual organs and functions, this finding expression in the old custom in Southern Italy of measuring the necks of brides at time of marriage and afterwards, any increase being regarded as evidence of conception (Richardson, *The Thyroid and Parathyroid Glands*, Philadelphia, 1905).

Experimental studies in relation to these problems, much stimulated by the recognition of internal secretions and the investigations in organotherapy which have had their inception in modern times in the work of Brown-Sequard and his followers, have been of great volume but of slow development, marked by the necessity for correction after the discovery of the specific nature of the parathyroids, by delays in eliminating faulty attributions of compensatory action to unrelated organs, and by a multitude of minor interruptions. At present it may be held tentatively but with considerable confidence that both the thyroid and the parathyroid glands are of extreme importance in general metabolism, and that both, particularly the parathyroids, are probably antitoxic, serving in some way by their influence in this direction to protect the nervous mechanism of the body: that the loss of the thyroid alone entails the development of a chronic myxedematous cachexia with diminution of mental and general nervous excellence; that loss of the parathyroids is followed by an acute and fatal autointoxication involving the central nervous system; that the thyroid is in some way related to the sexual organs, and probably also with the hypophysis cerebri; and that one or both of these organs in some way conserve heat regulation by an influence upon the mechanism of heat dissipation. Whether, at least indirectly, the thyroid is also of any consequence in hematopoiesis is uncertain; but this can not be entirely set aside, at least in relation to general metabolic influences upon the blood, although there is apparently no evidence of any direct part taken by the organ in the formation of the blood corpuscles.

After the appearances of the publications of the clinicians, Gull, Ord, Reverdin, Kocher and others, who in the later seventies and early eighties drew attention to the importance of the thyroid in cretinism and myxedema and to the results of removal of the gland in man, Schiff (*Rev. Med. de la Suisse Rom.*, Geneva, Vol. XVIII. 1884) returned to his early studies in thyroidectomy and performed complete thyroidectomy (this including the thyroids and parathyroids) upon sixty dogs, with uniform fatal results, the operation being quickly followed by tremors, twitchings and spasms, dyspnea and palsy, the longest prelethal interval after operation being fourteen days. In his communication upon this series of experiments Schiff stated that he had been able to avert the symptoms to a greater or less degree and the otherwise fatal termination of his operation by grafting beneath the skin of the experiment animal a portion of thyroid tissue; he believed that such a graft developed and acted in a compensatory manner for the ablated organ. This work (save the value and success of thyroid grafting, which in the hands of different workers has met with varying results) has in the intervening years been amply confirmed by a great number of investigators in the major proposition that complete thyroidectomy (including the parathyroids) is fatal; the main modification being applied to the fact that the acute phenomena and early death follow the ablation of the parathyroids, and that the removal of the thyroid alone is followed in experiment animals by chronic symptoms comparable to cretinism in the young and myxedema in the old in the human subject.

In 1888 and for several years thereafter a number of investigators, led by Munk, published studies which were interpreted as indicating that the phenomena of cachexia strumipriva and death obtained by Schiff, Rogowitsch (*Centralbl. f. d. Med. Wissensch.*, 1887) Ewald (*Berlin. klin. Wochenschr.*, 1887), and others, were due not to the loss of the thyroid, but rather to the irritation of and changes produced in the cervical sympathetic nerves by the operation and the ensuing healing process (Munk and Drobnick, *Arch. f. Exper. Pathol. u. Pharm.*, Bd. 25, h. 2, 1889; Munk, *Sitzungsbericht. der Berlin. Akad.*, No. 40, 1888; Langendorff, *Centralbl. f. klin. Med.*, p. 45, 1889). Carle (*Riforma Medica*, Rome, p. 191, 1887) had previously, however, with this in view divided the nerves entering the thyroid and had had no comparable results; Schiff (*La Semaine Méd.*, Sept. 18, 1889), repeating his previous thyroidectomies upon fifty-two dogs with Munk's contentions in mind, was unable to confirm the latter and reiterated his previous views; Fano (*La Semaine Méd.*, Sept. 18, 1889), Tarchanoff (*La Semaine Méd.*, Sept. 18, 1889), Wyss (*Corr.-Blatt f. Schweiz. Aerzte*, March 15, 1889), Herzen (*Rev. Med. de la Suisse Rom.*, 1889), Schwartz (*Dorpat. Dissert.*, 1889), Ewald (*Berlin klin. Wochenschr.*, No. 15, 1889), Weil (*Präger med. Wochenschr.*, Nos. 14 and 15, 1889), Michaelson (*Arch. f. d. gesammte Physiol.*, Vol. 45, p. 622, 1889) and others likewise opposed Munk's views after experimentation having more or less direct reference to this point. Many other observers, too, since then, keeping Munk's statements in view, have found no reason to substantiate his contention, which may be regarded as having by these studies been definitely disproved and abandoned permanently. In this connection, for example, might well be cited the experiment of Godart (*Jour. de Med. et de Chir. et de Pharmacol.*, Bruxelles, Jan. 27, 1894), who had in mind the older view that the thyroid in its vascular relations served as a circulatory reservoir for the brain, and who to definitely alter these relations removed one lobe of the gland entirely and gradually displaced the other from its natural position to the surface of the muscular aponeurosis, thus seriously disturbing not only the vessels and lymphatic relations, but certainly also producing all the nervous irritations which would be occasioned by complete thyroidectomy; yet by such manipulation he failed to produce any symptoms of the usual type, and very properly concluded that nervous irritation could not be invoked to explain the phenomena of the usual operation for ablation.

Shortly thereafter the question of a relation on the part of the spleen in the production of the phenomena of complete thyroidectomy arose and obtained some prominence, but was also eventually abandoned. Virchow, among others, had originally, from the idea of a possible interdependence between the various organs believed to possess functions of internal secretion, looked favorably upon this idea of a relation between the spleen and the thyroid. At the Congress of Italian Surgeons in 1888, Ceci had reported the case of a girl in whom enlargement of the spleen had followed thyroidectomy. Cardone (*Arch. Ital. di Laryngologia*, Pt. IV., 1888) reported two patients with splenomegaly in whom the thyroid was also enlarged, and suggested that the enlargement of the gland bore some relation to the loss of splenic function. Zesas (quoted by Lanz, *Sammlung klin. Vorträge,* Nov., 1894) had observed that in cats and dogs the spleen became enlarged after thyroidectomy; and Zanda (*Internat. klin. Rundschau,* July 23, 1893) claimed that in dogs thyroidectomy could be safely performed if the spleen had been at least a month previously removed. He suggested in explanation that the symptoms of cachexia strumipriva were due to a poison introduced into the system from the spleen, that by the removal of the latter such toxic material is eliminated and the thyroid rendered comparatively functionless. Fano (*Arch. Ital. di. Biologie,* Vol. 21, p. 3), attempting to repeat Zanda's experiments, failed completely to find any relation (although he at this time indicated a possibility that some other of the glands of the body having internal secretory function may perhaps have power of compensation for the thyroid), and Gley (*Arch. de Physiol., norm. et pathol.*, p. 135, 1892) in performing the same experiments found that a previous splenectomy excited no appreciable influence upon the results of total thyroidectomy; and with similar conclusions from other students the splenic relation was definitely abandoned.

Meanwhile it had been noted that while in the main the effects of total thyroidectomy had been fairly uniform, there were certain differences in this and that case. Young individuals in man and among experiment animals were more certainly and severely affected than the old. Distinct differences, moreover, prevailed among different classes of animals (Sanquirico and Orrechia, *Centralbl. f. Physiol.*, No. 22, 1888; Horsley, *Report of Com. of Clinical Society of London on Myxedema*, London, 1889; Ewald and Rockwell, *Arch. f. d. gesammte Physiol.*, No. 47, 1890); and Horsley (*Brit. Med. Jour.*, Jan. 30 and Feb. 6, 1892), in a critical article, divided animals into the following four groups in relation to their ability to resist the effects of thyroidectomy: (1) Birds and rodents, not affected; (2) ruminants and solipeds, affected by a slow and uncertain cachexia fatal only after a long period, the course ranging from one to three years; (3) man and monkeys, affected by a chronic cachexia with eventually fatal end, usually in a shorter period than in case of animals of the previous class; (4) carnivora, affected by intense acute symptoms with rapidly fatal termination. In 1893, however, Christiani (*Arch. de Physiol., norm. et pathol.*, p. 93, 1893) showed that of the first group, supposed to be relatively immune, rats rapidly and characteristically succumb (transplanting, however, successful in averting the usual results), and Gley showed the same for rabbits; and with the recognition of the specific character of the parathyroids and their anatomical relations (how in some animals these bodies are sufficiently separated in part or entirely to be missed in thyroidectomy, in others almost sure of removal with the thyroid lobes if unusual precautions are not observed) it became more and more apparent that the divergence of results lay largely in the question whether or not thyroidectomy in this or that animal included the parathyroids. Our present understanding is that complete removal of both thyroid and parathyroids is in all classes of animals fatal, while extirpation of the thyroid alone is borne with variable resistance and is in itself not necessarily fatal. It may be asserted that differences in time intervening before death after athyroidea (total thyroideetomy and parathyroidectomy) are in some measure determined by the habitual diet of the animal, herbivora and milk-fed animals, particularly young animals which have always been on milk diet (cf. Carter, *loc. cit.*), withstanding the effects of the operation longer than carnivora. Benissowitsch (*Gaz. des Hopit.*, Paris, May 29, 1894) has found, too, that in adult dogs nourished after thyroidectomy upon milk the fatal results are not so rapidly induced as in dogs ordinarily fed; but this finding lacks sufficient corroboration to be insisted upon and is opposed by some investigators. Modifying influences ameliorating the symptoms are also claimed for severe hemorrhages of the thyroidectomized animals (Rosenblatt, *St. Petersburg Med. Wochensch.*, March 10, 1894), the administration of orchitic fluid (Dourdoufi, *La Méd. Mod.*, March 10, 1894), previous castration (Kent, *Brit. Med. Jour.*, July 28, 1894), the administration of cocain (Dourdoufi, *loc. cit.*) and thyroid extract (Dourdoufi, *loc. cit.*; Kent, *loc. cit.*), and care in maintenance of moderate warmth of the surrounding atmosphere (Carter, *loc. cit.*; Smith, *Jour. of Physiology*, Vol. 16, p. 378). On the other hand, a full meat diet, or starvation and exposure accentuate the resultant symptoms and hasten the fatal end. The tendency is to utilize these findings to better explain the differences originally noted, especially such as can not be explained by the assumption of variation in the removal or preservation of the parathyroids, the meat diet being held responsible for the production of special toxic substances accumulating in the system which are supposed to be largely at the bottom of the serious effects of the operation (even carnivora, if sucklings, being relatively less affected), the metabolic activity (meaning the high toxin production) in young animals upon proteid diet, the lowered resistance produced by starvation or exposure to low temperatures being taken into account to explain other divergences of age and local surrounding influences.

The character of symptoms and the study of the tissues of animals, dead after thyroidectomy, from the first suggested the idea that the resultant phenomena are due to some type of autointoxication; and this continues to the present to be the dominating view, attributing to the parathyroids, and also to some degree to the thyroid, an antitoxic function. Among the earlier experimenters there existed in a tentative sense the idea that perhaps the thyroid secreted some pabulum essential to the development and maintenance of the nervous structures and functions (Schiff, *loc. cit.*, and *Schmidt's Jahrbücher*, July 15, 1889; Ewald, *Berlin. klin. Wochenschr.*, 1887), but this view has not been pressed and has been overshadowed by the evidence of an antitoxic influence (considering here the thyroid and parathyroids combined); and the writers who held this idea at the same time recognized the possibility that these organs produce some material neutralizing substances arising in the body and harmful to the central nervous system. Rogowitsch (*Centralbl. f. d. med. Wissensch.*, 1887), while fully substantiating the original findings of Schiff, from the first concluded, because he encountered in the brain and cord in thyroidectomized dogs a marked round cell infiltration, swelling of axis cylinders and destructive changes involving the protoplasmic processes of the cells and even loss of cells themselves, that the function of the thyroid (the parathyroids not here differentiated functionally from the thyroid) must be that of removing in some way from the system substances harmful to the central nervous system. (Studying in his cases, before and after operation, the blood, he was unable to find any alteration in the number of the erythrocytes or in the relations between these and the white blood corpuscles.) Among other writers among the older workers who have made similar observations regarding changes induced in the brain or cord after thyroidectomy, may be cited Golgi (*Schmidt's Jahrbücher*, July 15, 1889), Wyss (*Corr.-Blatt f. Schweiz. Aerzte*, March 15, 1889), Capobianco (*Riforma Medica*, Naples, Sept. 2, 1892) and Autokratoff (*Brain*, p. 3, 1890). De-Qevain (*Virchow's Arch.*, Bd. 133, 1893), on the contrary, after careful technical methods and comparison with tissue from control animals, concluded that it was impossible to declare surely for any constant changes in the nervous system; and to the present the matter is not finally and certainly determined. The existence of an actual intoxication does not rest alone upon this, however. Laulanie (*Gaz. Méd. de Paris*, May 30, 1891; *Comptes Rend. de la Soc. de Biologie*, No. 43, 1891) has found the urine of thyroidectomized dogs to possess an increased toxicity, a statement confirmed by Gley and Alonzo (*vide* Lanz, *loc. cit.*); and Gley (*loc. cit.*) by injecting the blood serum of thyroidectomized dogs into normal animals has induced nervous phenomena, even spasms, which could not be produced by injection of normal serum. Grützner (*N. Y. Med. Jour.*, Apr. 26, 1890), by infusing the blood of a thyroidectomized dog into a normal one, produced symptoms of the same type as those manifested by the thyroidectomized animals; and in this country Carter and Riesman (personal statement to writer) have obtained hypertoxic manifestations from the blood of thyroidectomized animals. Baldi (*Arch. Ital. di Biol.*, 1889, XXXI. p. 281), attempting practically the same experiments, was unable to obtain any positive results, and his conclusions are hence at variance with the above. It should be remembered, too, that not only the character of the symptoms but their mode of onset (absent usually for a day or two after operation, and then, after this interval of supposed toxic accumulation in the system, manifesting themselves either overwhelmingly or gradually) speak for this idea of the development of some harmful substance in the economy after removal of the thyroid and parathyroids.

Of the nature of the poisons presumably responsible for the phenomena of complete thyroidectomy, but little which is positive can be said. That they are partly derived from the food, especially proteids, may be strongly urged from the evident influence manifested by meat diet; that they are in part derived directly from cellular metabolism is urged by the intensity of symptoms manifested even in starved animals, by the influences exerted by lowering the surrounding temperature (when presumably a heightened compensatory metabolic effort is called out) and by the severity of the symptoms in young animals on proteid diet (the youth of the animal arguing activity of general metabolism). It is quite probable that such poisons are of extremely complex nature and probably multiple. Among other suggestions Benissowitsch (*loc. cit.*) has inferred from the analogy of the usual symptoms with those induced by introduction of CO_2, in animals which for the time have withstood thyroidectomy, that they may indicate a failure of a CO_2 combination to form urea or a failure of its elimination by the lungs. Notkine (*Wien. Med. Wochensch.*, Nos. 19 and 20, 1895) has extracted from the thyroid itself a toxin, "thyroproteid," with which he was able to reproduce the symptoms of total thyroidectomy, primarily stimulating and secondarily a paralyzant, in small dosage producing a long-continued cachexia, in larger doses rapidly fatal with induction of tetany and spasms; this substance it is suggested is brought to the thyroid where the thyroid secretion ("thyroidin") acts upon it, neutralizing it and perhaps converting it into a useful product (cf. also Brissaud, *Practitioner*, Oct., 1895). Whatever the substances, it seems fair from the character of the symptoms, their onset, and the findings of at least a large proportion of the observers, to conclude tentatively that they are toxic to the nervous system.

Since the recognition of the essential difference between the thyroid and parathyroids the effort to differentiate their several parts in the correction of these poisonous materials has been widely attempted, but the results can not at this time be asserted with finality, and their relation can only be surmised. It is accepted, of course, that, when all thyroid and parathyroid tissue is removed, death from intense intoxication follows. The overwhelming evidence, too, would declare that total parathyroid ablation is soon fatal, the operation being followed by a day or two in which no symptoms appear and the animal then becoming apathetic and dull, developing tetany, anesthesia of variable degree, dyspnea, loss of vascular pressure, lack of control of heat dissipation (maintenance of animal at room temperature prolongs life; exposure to cold causes an undue drop in the body temperature; exposure to heat undue elevation of body temperature as compared with control animals, cf. Carter, *loc. cit.*, and Smith, *Jour. of Physiol.*, Vol. 16, p. 378), spasms, palsies and death, the fatal end usually following in from four or five to eight or ten days. There are observers (even Gley, *Arch. de Physiol. norm. et pathol.*, Oct., 1893, after the removal of the parathyroids of dogs,—of course only the external ones as he was at the time unaware of the embedded internal parathyroids—concluded that these glands are not essential to life and can be removed) who have failed to recognize these organs as of vital necessity; but the more careful the operative removal and the more thorough the postmortem search for aberrant parathyroid tissue in animals which have failed to manifest the usual postoperative results, the more strong has grown the belief that these bodies are absolutely essential to life and that they perform a function apart from the thyroid in neutralizing toxic substances which are constantly developing within us. The administration of parathyroid extracts has not as yet been sufficiently carried forward to permit the application of arguments from this standpoint either for or against such a view.

Reverting to the thyroid alone, there is, on the contrary, little evidence, since the recognition of the importance of the parathyroid that this organ is of absolute necessity for life; and the instances of pathological changes involving it, of atrophy and of its entire absence in some living subjects, confirm this view. Of its importance in general metabolism, however, there is much evidence; but of any truly antitoxic value there is much uncertainty. Young animals, congenitally deficient in thyroid tissue, grow into cretins; young animals, deprived of their thyroids with due care for the preservation of the parathyroids, gradually lose their vivacity, become dull and somnolent, remain small and with permanent modification of body shape and proportions, and have typically lower temperatures than normal animals, a group of changes essentially cretinoid in character (cf. Eiselburg, *Lond. Lancet*, Oct. 29, 1892; Hofmeister, *La Sem. Méd.*, June 13, 1894). Older animals respond by the development of a chronic cachexia, analogous to the myxedema and cachexia strumipriva in man. There is a loss of intelligence and vivacity, development of muscular weakness, emaciation, alterations of the skin (the hair falling out and the skin becoming as a rule thickened and sclerosed, but sometimes containing an excess of mucin); the temperature is not well maintained apparently from fault in the regulation of heat dissipation; the palpebral fissure varies in its width, both exophthalmos and enophthalmos being described; the blood is dark and venous and gradually a definite anemia is developed. These changes argue undoubtedly for an influence upon general metabolism; and that they are not merely a loss of antitoxic influence is strongly urged from the notable influences obtained by thyroid administration, whether the gland itself, the dried gland, or the ordinary extract. Repeated observations have shown that thyroid administration lowers the blood pressure, widening the larger vessels and capillaries and increasing the lymph flow (Godart and Slosse, *Jour. de. Méd., Paris*, July 2, 1892); and Gurnard and Martin (quoted by Richardson, *loc. cit.*) have shown that after this condition is induced the administration of adrenal extract is sufficient to restore the normal tone. In v. Eiselburg's experiment upon young animals (lambs) above referred to, not only were the thyroidectomized animals small and ill-developed, but at autopsy at the age of six months advanced vascular sclerosis and aortic calcification were met. The condition of the blood is interesting in these metabolic relations, being dark and venous in character, containing a lower proportion of oxygen (Horsley, Herzen, *et al.*; *vide* Richardson, *loc. cit.*). Albertoni and Tizzoni (*Jour. de Med., de Chir. et de Pharmacol.*, Aug. 20, 1889) had held that in some way the thyroid furnishes to the red corpuscles their means of fixation of oxygen for purpose of circulatory convection, a view also expressed by Vessale (*Centralbl. f. med. Wissensch.*, No. 1, 1891). Actual changes in the corpuscles have been described by some observers, but on the contrary, careful investigation by others have failed to confirm these statements. For example may be mentioned the interesting congenital instance of myxedema recorded by Lebreton and Vaquez (*La France Méd. et Paris Méd.*, Jan. 18, 1895). Before treatment with thyroid extract the red blood cells were of extremely small diameter (often but little above three micromillimeters), while after thyroid administration they rapidly rose to attain the normal diameter of seven and one half micromillimeters; and nucleated erythrocytes, which were met prior to the treatment, completely disappeared after treatment. A similar observation is credited by these authors to Kraeplin several years prior to their own publication. The presence of albuminuria and of sugar in the urine have been noted as inconstant symptoms. The relations of the thyroid to the development of the generative organs and the maintenance of genital function, frequently observed, likewise bear in an important manner upon the influence of the thyroid upon metabolism. The presence of excessive mucin in the tissue of cases of deficient thyroid in man and occasional instances in experiment animals (here often replaced by sclerotic changes) and the correction of this fault by thyroid administration or by thyroid implantation stand in similar relation. Metabolism studies of thyroidectomized animals (Roos, *Zeitschr. f. physiol. Chem.*, XXI. p. 17, 1895) show an increased elimination of nitrogen, a decreased elimination of phosphorus, with (Smith, *loc. cit.*) uncertain changes in the absorption of oxygen and elimination of CO_2. (Michaelson, *loc. cit.*, studying the blood gases after thyroid removal, found on the contrary an increased elimination of CO_2 and apparently also an increase in the amount of oxygen consumed.) On normal animals the administration of thyroid has been shown by Voit (*Zeitschr f Biol.*, XXXV. p. 116, 1897) to greatly increase the nitrogenous elimination as well as that of CO_2; and to cause great destruction of tissue and loss of body weight.

The mode of action in metabolism followed by the thyroid is not clear. There is a general belief that it secretes some material which enters directly into the metabolic processes; but whether it is an enzyme, an activator of other parts, a true secretion utilized and consumed in metabolism or a substance essentially antitoxic in nature, is unknown. The discovery of iodin in the thyroid gland by Baumann (*Zeitschr. f. physiol. Chem.*, p. 319, 1895; *München. med. Wochenschr.*, Nos. 14 and 20, 1896; Baumann and Roos, *Zeitsch. f. physiol. Chem.*, XXI. p. 481, 1896; Roos, *ibid.*, XXII. p. 16, 1897) led to the supposition of the existence of an active principle operative as a metabolic agent, probably an organic compound of the iodin; and Baumann succeeded in extracting such a compound to which he gave the name "iodothyrin." This substance was for a time held by Baumann and his followers to be the essential derivative of the gland and has been exploited therapeutically. Its use, however, has been by no means satisfactory (Gotlieb, *Deutsch. med. Wochenschr.*, p. 235, 1896; Notkine, *Wien. klin. Wochenschr.*, No. 43, 1896; Wormser, *Pflüger's Arch.*, 1897, p. 505), and it is not comparable in its effects upon thyroidectomized animals to the thyroid itself. Dreschel and Baumann, studying this iodin-containing substance, were able to separate from it two other iodin compounds, one a globulin, the other an albumin. Oswald (*Münch. med. Wochenschr.*, Aug. 15, 1897), by extraction with ammonium sulphate and subsequent separation by acetic acid, also separated from thyroid tissue two proteid bodies of different activity, one an iodin-containing globulin which he speaks of as "thyroglobulin," the other a nucleoproteid containing phosphorus but no iodin. The former he regarded as the essentially active principle of the gland, and found that its administration increased greatly nitrogenous elimination, while the nucleoproteid has no effect upon nitrogen metabolism. This thyroglobulin Oswald has studied in the thyroids of various animals and in the normal and abnormal human gland; its constituents, carbon, hydrogen, nitrogen, sulphur and oxygen, he finds are practically constant, while the amount of iodin present in it varies. Thyroglobulin is richly present in the colloid of ordinary thyroid glands, but is proportionately less in that of goiterous glands; the iodin of the thyroglobulin is relatively smaller, too, in that derived from goiterous glands. He found that the colloid of a goiterous patient to whom iodid of potassium had been administered shortly before removal, contained an exceptional amount of iodin, and believed that thyroglobulin is capable of taking up iodin administered. Oswald holds that the colloid of the thyroid represents a secretory product which is carried by the route of the lymphatics into the general system; that it enters into metabolism and is broken up, the iodin being set free and eventually restored to the thyroid where it again combines with fresh thyroglobulin and is once more carried into the system to again take active part in metabolism. Roos (*Zeitschr. f. physiol. Chem.*, 1899, XXVIII. p 40) has found that by feeding thyroids containing known but different amounts of iodin he invariably obtained heightened metabolism the greater the amount of iodin present, thus indicating strongly the physiological importance of the iodin-bearing element of the gland.

Blum, advocating the idea of an antitoxic function for the organ (*Pflüger's Arch. f. d. gesammte Physiol.*, LXXVII. p. 70), doubts whether iodothyrin is really secreted as a physiologically active substance by the thyroid; he would look upon the iodin compounds found in colloid rather as an expression of antitoxic activity of the gland, as a combination of the iodin with a toxic proteid which he thinks has been extracted from the blood. The thyroid, he suggests, produces as its products loose albuminous combinations with iodin, which when brought into contact with toxalbumins unite with them and render them inert. Another view of the antitoxic influence attributed to the organ involves its supposed value in increasing the oxygen-bearing quality of the blood, thus increasing the destruction of imperfectly oxydized toxic products in the system and rendering them inert. Of these two ideas as to the mode of activity, between which it may be said present opinion wavers, it is possible that both may in a measure be true, although unquestionably the balance of weight favors the view that there is a product of active metabolic and trophic value developed in the thyroid gland. It seems not improbable that, in the failure of such material, secondary toxic changes arise which influence the whole system to produce the phenomena of chronic cachexia strumipriva. Of such secondary substances Levin (*Norsk. Mag. Laegevid.*, Apr., 1897) suggests that the mucins may play a part. He injected subcutaneously into thyroidectomized rabbits and control animals a one per cent. solution of sodium bicarbonate containing mucin. In his control he observed no results, but of the nine thyroidectomized animals only one withstood the administration, a marked fall of blood-pressure ensuing, which he attributed to depression of the medullary vasomotor center, continuing after section of the vagi and splanchnics, but corrected by stimulation of the splanchnics. While, of course, this does not in itself prove anything beyond the fact that thyroidectomized animals bear mucin injection poorly and that it produces in them a fall of blood pressure, it is suggestive when taken in relation with the excess of mucin met in the tissues of man in loss of thyroid and occasionally demonstrated in thyroidectomized animals.

Interrelations. In the performance of functions thus far suggested, no absolute basis for conclusions exists, but the trend of opinion would accept that there prevails some close relation between the thyroid and parathyroids. This is mainly suggested by the well established fact that the removal of the parathyroids in part is followed by notable changes in the quality of the colloid in the thyroid vesicles and by microscopic evidence of cellular hypertrophy in the latter organ. Conversely, too, a quasi hypertrophy follows in the parathyroids on the removal of the thyroid in part or entirely. It is true that in no sense does the parathyroid assume the characteristics of structure of the thyroid, and no colloid is formed in it; but there is the appearance of changes indicating increased activity. Gley has shown that in the parathyroids as well as the thyroid, iodin exists, and this may in some way come to be utilized in metabolism or in antitoxic action as the iodin of the thyroid is presumed to act. Beyond such surmises; however, it is impossible to make definite assertions from the meager data at hand.

That the hypophysis cerebri may assume compensatory functions in event of thyroid loss has been more than once advocated. The embryological origin of its anterior portion relates it to the same general derivation from the hypoblast of the fore-gut as the thyroid and parathyroids. It has a normal structure not unlike that of the parathyroids; and exceptionally it is found to contain well marked colloid accumulations. In rabbits after thyroidectomy Hofmeister (*Münch. med. Wochenschr.*, Aug. 30, 1892; *La Semaine Méd.*, June 13, 1894) found the hypophysis greatly enlarged; and Streda (*Jour. A. M. A.*, Oct. 18, 1890) had previously noted the same fact. Gley (*Arch. de Physiol., norm. et path.*, 1892, p. 311), having lacerated in a rabbit the pituitary body several months after the removal of the thyroid, found that muscular weakness and disturbances of nutrition at once set in, and believed that by this demonstration he had shown a real relation between the hypophysis and the thyroid gland. The occurrence of pituitary enlargements in man in connection with cretinism and myxedema stand in similar relation (cf. Boyce and Beadles, *Med. Chronicle*, Dec., 1892; Viola, *Neurol. Centralbl.*, Sept. 15, 1890; Gron, *Brit. Med. Jour.*, Sept. 1, 1894). However, findings of this type are by no means constant either in man or in experiment animals, and the suggested relation for the present can only be suspected and may not be asserted upon the scant basis the above references afford.

Résumé. In conclusion it may be well from the above to formulate the following statements which seem either entirely justified or suggestively indicated at the present time, as the results of the various studies mentioned as well as many others which have of necessity in this outline been neglected.

1. The parathyroids and thyroid gland are structurally distinct and are not in any sense interconvertible.

2. There is probably some relation in their functions, and loss of one seems to stimulate the other into special activity (into at least an apparent hypertrophy).

3. The parathyroids are essential to life, and when lost are soon followed by death with previous intense symptoms of a neurotic autointoxication which can not be averted by the thyroid itself even if practically intact.

4. The loss of the thyroid is followed by chronic trophic and metabolic disturbances, which are not necessarily fatal, and which in general follow the type of cretinism, myxedema and chronic cachexia strumipriva in man. While the function of the parathyroids strongly suggests an antitoxic activity, there is reason to believe that in case of the thyroid a true metabolic physiologic secretion is produced, although it is possible that in a limited degree here, too, an antitoxic influence is associated.

5. The active product of the thyroid is probably one of the organic iodin compounds which have been isolated from it, probably the thyroglobulin of Oswald.

6. There is suggestive evidence that in addition to the indefinite relation believed to exist functionally between the thyroid and parathyroids there is also a close relation between the thyroid and the hypophysis cerebri, which may possibly have some degree of compensatory ability.

7. In addition to the above the thyroid is concerned in the functions of growth; is involved especially in nitrogenous metabolism; and has some indefinite but real influence upon the development and efficiency of function of the generative apparatus.

Neither a borrower nor a lender be;
For loan oft loses both itself and friend;
And borrowing dulls the edge of husbandry.
—Shakespeare.

THE ROENTGEN TREATMENT OF TUBERCULAR GLANDS.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

It is with some hesitation, and only upon the repeated invitation of several honored members of this section, that I venture to bring before you the subject of "The Röntgen Treatment of Tubercular Glands." It may be suggested that such a paper belongs in the section on medicine but with this I can not agree.

The treatment of tubercular glands is no longer medical but has fallen by common consent into the hands of the surgeon. With the results obtained by competent operators in this disease, I have no fault to find, but praise only, since careful statistics show that a cure may be expected following proper surgical procedure in fifty-seven per cent. and a local recurrence in about twenty per cent. Tuberculosis of other organs, however, follows operation with a frequency that is not to be viewed with complacency. About twenty-six per cent. develop pulmonary tuberculosis following operation. If operation be attempted at all, total extirpation is the preferable procedure; an incomplete incision and evacuation is to be decried.

The majority of these cases begin in the deep cervical chain of glands, since this chain drains the mouth, nose and pharynx, thus having abundant opportunity for infection, and unfortunately the surgical relations of this chain are such that radical extirpation requires for its performance exceedingly skillful surgery. The internal jugular vein, the spinal accessory nerve, some fibers of the facial, the thoracic duct, the phrenic, pneumogastric, hypoglossal and some of the branches of the cervical plexus must be avoided during the dissection necessary for removal of the deep cervical chain. Mortality following operation is practically absent and statistics show that in the hands of the skilled operator performing the radical operation in tuberculosis of the cervical lymphatics an ultimate cure may be expected in from seventy to ninety per cent. of favorable cases. In the face of such excellent results, it seems unnecessary to suggest the employment of any other means of treatment, but while these statistics sound well, yet it is a fact that the surgeons themselves are not entirely satisfied with the results obtained in the treatment of this disease, and many experienced surgeons do not care to handle these cases because recurrence following operation has taken place in their hands, in a very large proportion of cases.

The so-called recurrences are really reinfections; a gland that has been removed will not have a recurrence, but so long as the portal of infection remains and there also remains a single lymphatic gland in the chain, superficial or deep, such gland may and probably will become infected. The difficulty surrounding a complete extirpation of all the glands in the deep cervical chain is very great and the operation is practically never performed, the operator of necessity contenting himself with the removal of all palpably affected structures. Were it possible to remove the entire chain of glands, the focus of infection and all the infected structures, surgical statistics would show 100 per cent. of cure with no recurrence. Occasionally, therefore, failure must be expected to follow the most complete operation possible in the hands of the most skillful and conscientious operator, and, when such failure to cure occurs, no reflections upon either the operation or operator are in order.

The use of the Röntgen ray in the treatment of tubercular glands is not new.

Cases have been treated as long ago as six years. Some surgeons have expressed themselves as very well satisfied with the results obtained; others have denounced the treatment as useless and worse than useless inasmuch as, first, "The application of the ray fails to exercise any effect, curative or otherwise, upon the effected tissue." Second, "When such failure had occurred and operation was imperative, such operation was rendered tedious and difficult owing to the obliteration of the lymphatics, their matting together with inflammatory products and the obscuring of the surgical land marks." Such an accusation as this directed against the use of the ray in this disease demands investigation and the investigation reveals the fact that in no case where such charges have been brought had the treatment been continued long enough to reasonably expect curative results, or cases unsuitable for radiation were subjected to it, or the radiation was performed by an incompetent, inexperienced, unqualified operator.

Let us investigate further the charge that no curative effect was produced. This may be squarely met by the statement that in no such case was a curative quantity and quality of radiation applied.

Radiotherapy is neither Christian science nor suggestive therapeutics, but, for every unit of radiation applied to healthy or diseased tissue, just exactly so much reaction must and always does occur in the normal individual, and, if idiosyncrasy be present, this reaction may be mutiplied many times. This is not a matter of personal opinion, it is a statement of incontrovertible scientific fact. It has been demonstrated countless thousands of times, and has never been disproved. Therefore, I say that where the statement is made that no effect, curative or otherwise, was produced the solution is childishly simple: nothing was given.

It requires just as much skill and experience to successfully treat tubercular affection of the deep cervical lymphatics by radiotherapy as it does to do a clean, safe, complete dissection of the same structures.

In regard to the second charge, namely, that operation is difficult or impossible because of the obliteration of the lymphatics, etc., I wish to state that this result is precisely what the intelligent operator aims to produce. If he can painlessly, safely, and without scars produce a complete obliteration of the trunks of the lymphatics and an inflammatory reaction of the glands themselves resulting in a complete fibrosis, what more could be asked? Not only have you produced a complete cure of the disease and destruction of the infected tissue, but an absolute bar against the infection of any other lymphatics by tuberculosis, since, if the trunks are obliterated, the infection manifestly can not spread. Moreover, operations performed which reveal the condition complained of by certain surgeons are absolutely unnecessary, uncalled for operations, since, if the same radiation that produced the condition of which they complain so bitterly and loudly had been continued further, the ultimate result would have been a permanent and complete cure of the condition for which the operation was performed. It must also be remembered that negative testimony is of value only when it conflicts with positive testimony if it be present in overwhelming amount and that one positive result counterbalances countless negative results. Also, failure to produce results in any given disease by radiotherapy, where there is positive evidence that other operators have achieved good results in the same disease, only calls into question the capability of the operator, not the power of the agent. Inability to perform a given surgical operation successfully only shows that you are probably not as big a surgeon as the man who devised the operation, and who is able to do it successfully.

What is the effect of therapeutic doses of *x*-ray upon lymphatics infected with tuberculosis? The observations of several hundred competent observers agree exactly upon this point. Following a proper course of radiotherapy, the glands, if about to undergo suppuration, are hastened in this process; but if they have not advanced to the stage of suppuration prior to the institution of the treatment they slowly subside; the pain, if present, lessens and disappears; the swelling reduces; inflammation, if present, subsides, and there finally remains but a few thin hard corded trunks of lymphatics, studded here and there with small, round, intensely hard bodies which represent the glands.

On section the lumen of the trunks is found to be obliterated by a fibroid degeneration; the glands are found to be composed entirely of fibroid tissue utterly lacking the characteristics of glandular structure. Not only has this change taken place in those glands which were palpably affected, but the same process of sterilization is carried on as deeply as the ray has penetrated, and this penetration is under the control of the operator if he is capable of employing the method correctly.

Not only is this method applicable in those cases in which complete surgical removal would prove difficult or impossible, but it should be employed as a routine procedure following the extirpation of tubercular glands in any part of the body, if the operator wishes to lessen his percentage of recurrence, since, by a few postoperative treatments, properly measured and applied, a sterilization of the neighboring glands may be readily affected. Where the patient presents one or several large discrete glands showing a tendency to suppuration, operation is indicated and should be performed immediately if the patient's general condition is such as to permit; but, where the case presents a diffuse tubercular infection of the small palpable glands in the triangles of the neck on one or both sides, with some supraclavicular and axillary involvement, any operative measures will usually be followed by recurrence unless the operation is followed by a course of radiation at the hands of a qualified man, and in many of these cases I have no hesitation in claiming that better results and more satisfactory to both patient and operator can be obtained by the *x*-ray alone. This is a personal opinion based on an unbroken record of successful results in this class of cases, all of which were in adults, many of whom had been submitted to operation once or more previously.

The technic employed in the treatment of these cases is simple. A self-regulating tube is set to give a penetration sufficient to affect the deep glands. It is enclosed in a protective shield and there is a filter imposed between the tube and the patient. The tube is placed at a distance of ten inches, a current of 1½ milliamperes is employed for ten minutes or longer at the discretion of the operator, three times a week, care being taken to avoid any unnecessary degree of reaction although a moderate dermatitis is usually followed by a quick response in the glands themselves. In from thirty to fifty treatments the desired result is usually obtained. The sinuses, if present, heal up; the lumps melt down and disappear; the patient improves in health and strength and a careful palpation of the affected area shows the presence of a few small, round, movable, intensely hard fibrous masses which mark the site of the affected glands. The size of these will be proportionate to the amount of enlargement suffered by the glands. The ray must not be confined strictly to the region affected, but it is the part of wisdom to ray the surrounding glands widely. If the supraclavicular glands be involved primarily a tubercular focus in the apex of the corresponding lung should be suspected and rayed energetically. This focus can not yet be attacked surgically.

The treatment has a number of advantages. First, it is free from pain, and it relieves pain if present. Second, it does not necessitate confinement to bed or to a hospital. Third, it has no death rate and in the hands of a competent man is practically void of danger. Fourth, the cosmetic results are excellent. It produces no scars and reduces any that may be present from previous operation. Fifth, its results are equally permanent to those following operation; liability to recurrence is less, and recurrences, if they occur, respond promptly to radiation.

Its disadvantages are: First, it is tedious. Second, it is expensive. Third, it requires the service of an expert just as does operation. Fourth, sufficient time has not elapsed to demonstrate a greater permanence than four years in the many cases reported as cured.

Tubercular adenitis, owing to its liability to lead to tubercular infection of other portions of the body, must be regarded as a serious affection, and every case should receive the best treatment possible, as early as possible, and, since the fear of operation, no matter how unjustifiable, in many patients leads them to defer or refuse operation until such time as a general infection has rendered operation useless, I believe it is proper that the surgeons should investigate the method which I have described in order that such cases may have the benefit of something better than the ordinary line of cod liver oil and syrup of iodid of iron.

SURGICAL TUBERCULOSIS.

BY GEORGE W. GUTHRIE, M. D.,
Wilkes-Barre.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The above title is rather indefinite and hardly indicates the line of thought I shall pursue in this paper. My purpose is to consider some local manifestations of tuberculous disease when they are primary in character and to present the claims of surgical interference for their relief.

Tuberculosis, like carcinoma, is local in its primary manifestations in a large percentage of the cases we meet; we have tuberculous pleurisy, tuberculous peritonitis, tuberculous adenitis, tuberculous testes, tuberculous ulcers, tuberculous joints, and many other manifestations of the disease that are distinctly local in character in their primary stages.

Osler says that statistics from morgues and postmortem rooms show a large number of cases of tuberculous deposits in bronchial glands, and quotes Biggs as claiming that they amount to sixty per cent. of the whole number; that, in one hundred and twenty-five postmortems in the New York Foundling Hospital, the bronchial glands were tuberculous in every case; and he further states that these glands are frequently tuberculous when the individuals are regarded as healthy. The same author states that in a great majority of cases general infection is due to autoinfection arising from a preëxisting tuberculous focus which may be latent and unsuspected. I quote from the same author again, since I can quote from no greater, where he says, "The existence of an unhealed focus of tuberculous adenitis is a constant menace to the organism. It is safe to say that in three fourths of the instances of acute tuberculosis the infection is derived from this source."

Now, if these statements be true, (and who can doubt them), what is the remedy? "If thy right eye offend thee, pluck it out; and if thy right hand offend thee, cut it off and cast it from thee." In other words it is the duty of the surgeon to remove promptly and thoroughly all local manifestations of tuberculous disease when it is possible to do so, before general infection has ensued. I have referred above to the primary local character of carcinoma.

Every one admits the importance of prompt and thorough operations in this disease, and it appears to me that the same thoroughness, with which Halsted cleans out the axilla in carcinoma, should be used in removing tuberculous glands from the neck, the axilla, or the groin; one thing is certain that, unless thoroughness is practiced, the operation will be disappointing; if only the palpably enlarged glands are removed, by incision and hooking them out with the fingers, the operation will be followed by a recurrence of the trouble, other glands becoming enlarged, and the last state of the patient be worse than the former, justifying the caution and conservatism urged by Agnew in treating these glands. A thorough, painstaking dissection, in which the chain of glands and lymphatics, together with connective tissue and fat, are all carefully removed, alone, will be followed by satisfactory results.

But not only in adenitis of the neck, axilla, and groin, has surgery been effective in treating and curing local manifestations of this disease.

My purpose can best be conserved by referring to a number of cases occurring in my practice in which surgical interference has given satisfactory results.

Case 1. The first is that of Miss W. who was admitted to the Wilkes-Barre City Hospital, June 15, 1900, giving a history of a severe attack of intestinal indigestion six weeks before admission, and an attack of appendicitis ten years before. At the time of admission there was pain and tenderness in the region of the appendix, and the patient was markedly emaciated; only a remnant of the proximal end of the appendix was found, the organ having, no doubt, sloughed off in the attack ten years before. But there were found three inflamed mesentery glands in the mesocolon, as large as an ordinary hazelnut; these were removed, as well as the appendix stump. A diligent search failed to find any others. The patient made a prompt recovery, rapidly regained her lost flesh, and has been perfectly well ever since, a period of six years.

The pathologist's report pronounced the glands tuberculous.

Case 2. Charles O., age 23. His family were tuberculous, three children having died of tuberculous meningitis, and another having a Pott's spine. The patient had been failing for several months. He was admitted to the hospital, March 18, 1903, for pain in region of appendix. The appendix was found inflamed, thickened, and adherent. Two enlarged glands undergoing caseation were found, one at base of appendix, the other in mesocolon. All were removed. This patient, also, recovered promptly, and has remained well ever since, for over three years, and works as a machinist.

Pathological report of glands said they were tuberculous.

Case 3. Tuberculous peritonitis; operation, incision and closure without drainage; recovery.

Mrs. W., age 30, was admitted to hospital, April 14, 1902. She was emaciated, abdomen was pendulous on standing, and she had been sick for several years, having had pleurisy and some cough. Operation was performed the next day. The peritoneum was studded everywhere with nodules, and the cavity filled with straw colored fluid; the abdomen was carefully and gently mopped out, and made as dry as possible; the left ovary, which looked more suspicious than the other organs, was ligated and removed; closed without drainage. The patient steadily improved and went back to her home in the country.

Under date of July 29, 1906, she reported that the wound discharged for two years following operation, then closed permanently; that she weighed 137 pounds, was in good health, doing the work for her family, and nearly all the work in a large garden. The operation was performed over four years ago.

Case 4. Sinus of neck from suppurating gland, followed twelve years later by tuberculous mammary gland.

Miss M., age 30, came to me in 1892 with discharging sinus of left posterior triangle of neck close to clavicle. The sinus was laid open, cureted and packed; the wound healed promptly.

She came again, May 18, 1905, with a growth in the left mamma, hard, adherent, and softening imminent. May 26, entire gland and contents of axilla were removed.

Recovery was very prompt, general condition indicates perfect health.

Pathologist reported the growth tuberculous.

Case 5. Tuberculous ulceration of anal region; fistula and sinuses of anus, and in coccyx region. Operation was followed by recovery.

Robert W., age 28, ancestry tuberculous, was admitted to the hospital, August 30, 1905, with several ashy gray sinuses in both ischiorectal fossæ, and over coccyx. Operation was performed August 31. Sinuses and fistulas were freely laid open, freely cureted, and packed with iodoform gauze, resulting in good and prompt recovery.

His physician reported, September 5, 1906, that the patient was in Europe and very well.

Case 6. Tuberculous epididymitis; removal, testicle preserved; recovery.

Mr. R., age 23, student, had unmistakably tuberculous ancestry. On his way to Europe in July, 1902, he had an attack of epididymitis of left side, presenting ordinary symptoms of pain, swelling, etc. There had been no history of venereal disease. Arriving at Belfast he was placed under treatment, and the trouble subsided but did not entirely disappear. The epididymis was thickened and any unusual exercise would increase his difficulty, or bring on a recurrence of the trouble. I first saw him, January 1, 1903. I gave him a letter to a surgeon of prominence of the city in which he was pursuing his studies. The patient visited the surgeon who failed to communicate the fact to me. On the twenty-fourth of April, 1903, I operated on him. Opening the tunica vaginalis, I found about a dram of fluid; the epididymis thickened, nearly as large as a small finger, and several nodules studding the parietal layer of the tunic, and some degeneration of the lower end of the vas deferens.

The operation consisted in carefully dissecting away the entire parietal layer of the tunica vaginalis, and removing the epididymis, ligating the globus major close to the testicle, and the vas deferens as far up as it appeared affected. Healing was *per primam*, and no apparent scar remains.

Report made September 4, 1906, says conformity of testis is perfect, and patient entirely well. Visiting the eminent surgeon after his recovery, the patient was told that the operation had not been radical enough, that there would, probably, be a recurrence, or that the testicle would atrophy. Over three years have elapsed, and none of the grave predictions have been realized.

Why did I not do a more radical operation? For this reason: The young man was under engagement of matrimony, and the wedding day generally determined upon. Would it have been wise to castrate him under such circumstances? I think you will agree with me that it would not! We all know how promptly recovery follows the removal of a tuberculous testis, but it seems to me that this most satisfactory result following a removal of only the diseased structures of the organ justifies a great confidence in this form of operation, and the conservatism exercised in this case. You will pardon me, I hope, for saying that this young man is happily married; is the father of one beautiful child, and has prospects of being similarly blessed a second time at no distant date.

I do not claim anything unique, or especially peculiar in these cases; they stand simply as types showing that recovery, satisfactory recovery, will frequently follow radical operation in acute primary tuberculosis of local character.

THE CLINICAL SIGNIFICANCE OF THE SO-CALLED ACUTE STAGE OF BONE TUBERCULOSIS.

BY H. AUGUSTUS WILSON, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The elaborate consideration that is being given to every phase of tuberculosis, the careful study that is being given to its prophylaxis, and the vast amount that is being written, said and done along this line of work warrants a critical discussion of the clinical significance of the so-called acute stage of bone tuberculosis.

The results of modern study, clinical and pathological, separately and combined, may be accepted as demonstrating conclusively that bone tuberculosis is essentially a chronic disease having invariably an insidious onset. This is in marked contrast to the sudden onset of those acute conditions with which it is sometimes confounded. Between the chronic course of bone tuberculosis and the acute, sudden manifestations of other diseases accompanied by high temperature, great pain and swelling, there are many points of essential differences that may be generally accepted as diagnostic.

Within the past few years marked changes have taken place in the manner of describing certain forms of bone tuberculosis. Formerly it was customary to divide hip joint tuberculosis into three stages with an attempted grouping of symptoms appropriate to each stage. Efforts were made to establish a separate pathological basis to fit the clinical phenomena. Careful study finally resulted in the rejection by most writers of such artificial divisions as unscientific, impractical and contrary to pathological knowledge and calculated to induce erroneous conclusions and the adoption of illogical methods of treatment.

Definite knowledge obtained through operative and postmortem investigations has resulted in a general acceptance of the scientific determination that tuberculosis of the bones and joints should be considered as such only in its incipiency, and that all subsequent conditions should be considered sequelæ, not essential parts of the disease. Any other view would seem to be irrational and contrary to the accepted classification of symptoms and signs in other diseases. Thus otitis media purulenta is a possible result of scarlet fever, bowel perforation or spontaneous luxations of joints may result from typhoid fever and yet no one of these complications is ever considered as a stage of either of the diseases mentioned.

In former times it was a common observation that tuberculosis of bones and joints had to run its course; that no matter what methods of treatment were employed, results could not be greatly influenced. Abscesses that were considered certain to develop would have to be evacuated, aspirated or incised or ultraconservative methods resorted to. The best that could be expected, was the avoidance of too great unsightly and hampering deformity when the supposed inevitable ankylosis occurred.

In marked contrast to these erroneous views held but a few years ago and thus briefly indicated, are those of the present day. Now our greatest efforts are directed toward arresting the progress of the disease while in its incipiency. Modern results have accumulated to prove the efficacy of this rational basis of treatment, and the full normal function that has been obtained in large numbers of patients attests to the accuracy and soundness of the doctrine of the present time. Failure to obtain the best results depends upon many factors, the most important being errors and delays in diagnosis. The very insidious character of the disease tends to disarm suspicion as to its seriousness. The intermission in symptoms, the slow progress, the referred pains, the apparent triviality of the manifestations often cause delay in making a critical study and analysis of the affection allowing the disease to advance and the symptoms to become still more pronounced. When finally a definite diagnosis is made, the disease has made such progress that arrest of its destructive tendencies, if accomplished at all, is secured too late to avoid loss of function.

Upon the general practitioner must often fall the credit of early recognition. The orthopedic surgeon rarely has the opportunity of studying these cases of tuberculosis of the bones and joints until the manifestations have become conspicuous.

It would seem that time might well be spent in urging the importance of early diagnosis and the ofttimes terrible penalty of delay. The undergraduate instruction that is now being provided as a regular part of the curriculum of medical colleges is accomplishing this much to be desired end, and the new members entering the medical profession are impressed with the importance of definite knowledge of the character of bone tuberculosis, the necessity for its early recognition and the importance of prompt treatment.

There appears, however, to be some confusion still existing in the minds of some orthopedic surgeons causing greater confusion in others. I have encountered no greater difficulties than those met with in undergraduate teaching in trying to explain what is meant by the acute stage of bone tuberculosis. The necessity for the consideration of this subject has been made apparent by the questions that have been asked by medical students as well as by general practitioners. If there is an acute stage it is important that its manifestations should be clearly emphasized. If there is no acute stage then it is most important that the use of the term should cease and some other manner of indicating the condition it is supposed to cover should be adopted. If bone tuberculosis is an essentially chronic insidious process, can there be an acute stage? If there is an acute stage does it occur at the beginning or is it a later occurrence? If the acute stage is the onset then is there not great necessity for a revision of methods of diagnosis of bone tuberculosis and the acute inflammatory conditions that at times have some resemblance to it? If the acute stage covers recognizable conditions that are to be expected after the onset, will it not be conducive to uniformity, consistency and accurracy to change the word *stage* to some other less confusing term?

From the great mass of accumulated evidence it seems to be apparent and beyond controversy that tuberculosis of the bones and joints is an insidious, chronic local disease associated with marked constitutional symptoms; that the action of the bacillus tuberculosis has characteristic and definite pathological manifestations; that the predisposition to the disease may be either inherited or acquired.

A favorable progress depends upon the general health and powers of resistance as well as upon the careful management of the case that is demanded to overcome the destructive tendencies. The initial local disease is never painful nor associated with elevation of temperature beyond one degree. It differs very markedly in its manifestations and its onset from acute synovitis, acute osteomyelitis, acute epiphysitis and other acute diseases characterized by the suddenness of their onset.

In the beginning there is stasis in the cancellous structure of bones in which the capillaries become engorged and furnish a fertile field for the growth of the bacillus of tuberculosis, with consequent breaking down and disintegration of the minute bone cells. During this early invasion the process is not acute and at times there are no appreciable symptoms.

Many specimens of bones that have been examined after excisions or postmortem or in the dissecting room have clearly shown small and large cavities in the bones that have been the original sites of bone tuberculosis. In some instances the cavities have been walled in by new bone and have thus isolated the infected point. In others the walling in process has gone on until the former cavity was obliterated and the space filled in with new bone of a very compact character. In some of these cases it would appear that there could have been no pronounced symptoms, for the natural inference is that the disease must have been confined to a very small localized spot, and as soon as the stasis was overcome the morbid process was arrested and reconstruction begun.

In those cases in which the morbid process was not recognized or arrested and therefore advanced, increasing in the amount of bone destruction and in breaking through into a neighboring joint, we are to look for the conditions that were formerly divided into the three stages previously referred to.

The involvement of the joint often gives rise to the first distinctly marked symptoms of the disease and for that reason we have usually discussed tubercular osteitis under the consideration of joint affections; thus, hip disease, white swelling and knee joint disease, etc. Again a sufficient number of pathological reports have accumulated to throw doubts upon the theory of tuberculous synovitis ever being the original lesion and definitely establishing the assertion that such joint affections have their origin in bone tuberculosis in the great majority of cases. Involvement of the joint is often manifested by the earliest symptoms that we now recognize as being reliable; *i. e.*, muscular rigidity as a means of protecting the joint involved from injury.

It is a very common experience to those who observe cases of bone tuberculosis that often, months after the character of the disease has been established, severe pain, swelling and temperature changes occur. I suppose that this occurrence, more or less frequently observed, is the condition that has been designated as the acute stage. Such exacerbations must have a pathological explanation and I assume that it can most readily be found in the pressure phenomena and toxemia produced by accumulation of the detritus within the field of the osteitis. This increased pressure causes the advance of the osteitis in the line of least resistance and opens up a larger field which in turn is exposed to the effects of the tubercle bacillus. As soon as the active process of advance opens up new territory and thereby releases the previously existing pressure, the severe paroxysms of pain subside together with the lowering of the temperature.

This apparently favorably condition is often accomplished spontaneously but most frequently it is secured through the adoption of methods of enforced rest to the affected part as well as to the entire body and other hygienic measures. The manner in which these so-called acute stages recur with varying intervals and in varying intensity is sufficient proof of the danger of calling this recurring pain the acute stage. There may or may not be a recurrence of the pain, etc., but I do not believe that it should be called the acute stage of the disease.

To call the phenomenon in question a stage is to imply that it is a necessary part of the process, which is entirely contrary to the well recognized facts. To call it the acute stage is still further erroneous because it thereby indicates that it is the beginning of the affection instead of being an avoidable sequela.

In reality, the occurrence of the symptoms of the heretofore acute stage is a danger signal indicating the advance of the destructive tubercular process. If forms of treatment have been employed it will thereby be made apparent that the full requirements of the case have not been met or that they have been delayed in application.

To continue using the term acute stage will cause those who generally see the patient in the beginning of the tuberculous osteitis to draw erroneous conclusions from the apparently trivial symptoms of muscular rigidity, altered joint functions and referred pains. It will undoubtedly have a tendency to ignore the early recognizable symptoms while watching for the manifestations of the so-called acute stage, thus allowing valuable time to pass and the disease to advance. I would, therefore, advocate the discontinuance of the words acute stage whenever tuberculous bone disease is considered. Instead let the conditions be classed where they belong among the complications of the disease process, to be met by appropriate treatment wherever they occur. If surgeons will discourage the use of the misleading term acute stage it will induce others to adopt the more logical designation and will, therefore, have a broadening influence.

I have only to refer again to the vast benefits that have resulted from the abandonment of the former irrational method of dividing hip-joint disease into three stages for an indication of what may be expected from the adoption of the suggestion I now offer.

DISCUSSION.

ON PAPERS OF DRS. JOHNSTON, GUTHRIE AND WILSON.

Dr. John H. Gibbon, Philadelphia: This section is certainly indebted to Dr. Johnston for the very logical presentation of the treatment of tuberculous glands of the neck. He has clearly shown that the treatment is distinctly surgical and it would have been well if our medical friends in the other section could have heard his paper, as I think that the internist needs to have impressed upon his mind the fact that, in order to cure these patients, it is necessary first to thoroughly remove the glands, and to repeat the operation if other glands develop. It is just as important also for the surgeon to remember that after operation the hygienic treatment of the patient is of utmost importance. It is only by the combination of these two forms of treatment that the improved results can be obtained. If possible, the operation should be done before suppuration has taken place, and every palpable gland should be removed. In order to do this a complete dissection of the neck is necessary. Any incomplete operation is worse than none at all. This is one form of tuberculosis which can be said to be distinctly local, and the early removal of the glands with the proper hygienic treatment is the only method of avoiding subsequent lung involvement.

I have had little experience in the use of *x*-rays in the treatment of these cases. I have had, however, some experience in the removal of glands which have been subjected to the *x*-ray, and know that the treatment interferes with the ease and thoroughness of the operation by producing extensive and tough adhesions. My own feeling, therefore, would be not to employ the *x*-rays where operation was contemplated.

Dr. Ernest Laplace, Philadelphia: The *x*-rays destroy tuberculous processes, provided suppuration has not set in; if it has set in, *x*-rays will spread the infection. Therefore, inasmuch as the surgeon does not know in advance whether or not some of these glands have undergone cheesy degeneration, the best thing to do is to remove the glands and trust to the *x*-ray to finish the work of the surgeon. I fully agree with Dr. Gibbon when he says that tuberculosis should be removed thoroughly and completely, and then followed by the hygienic treatment.

Nothing was said in this discussion relative to the open-air treatment of tuberculosis following the surgical treatment, or as a complete treatment in itself. We all know its usefulness. This will be a very important factor in the treatment of all forms of tuberculosis, surgical and otherwise, in the near future.

Tuberculosis can not be spread unless in a soil especially prepared for it. But if prepared by some growth or injury, it develops rapidly.

Dr. David Silver, Pittsburg: At first glance it might seem that Dr. Wilson's subject was of theoretical interest only but, as he has shown, it is in reality of the greatest practical importance. No one thing has, I think, done more to prevent the early diagnosis of tuberculous bone and joint disease than this idea that such disease begins with an acute stage. The student who has been taught to expect an acute stage in the early course of this affection is almost sure to fail to recognize the condition at its inception, when treatment is of the greatest value. At this period the patient is often apparently healthy, and, beyond the slight limp or pain which has attracted attention, symptoms of disease are discovered only by the most painstaking examination. Nothing suggestive of an acute condition is present, for destruction of bone and pus formation, which gives rise to symptoms characteristic of the so-called acute stage, have not yet taken place; moreover, since the disease, when treated sufficiently early, may progress to recovery without the occurrence of bone destruction or pus formation, it is easy to see that symptoms characteristic of the acute stage may not be present at any time in the entire course of the disease.

This suggests the importance of early treatment and I wish to emphasize the need of appropriate joint protection in every case where there is the slightest possibility of tubercular trouble. Fixation is easily obtained by means of plaster of Paris dressings and freedom from weight bearing by rest in bed, which should always be insisted upon in children, when necessary, as time has no value to a child.

I would like to call attention to one feature of Dr. Guthrie's paper. While I believe fully in the value of surgical procedure, I feel that we are likely to forget that even the most successful operation does not, at least in the majority of cases, free the patient from all tuberculous foci, but only from the active focus. These other foci can be reached only by general measures, among which the open-air treatment is recognized as most valuable. It seems to me that too much stress can not be laid upon the importance of a strict open-air régime in surgical tuberculosis, for, while we all admit its value, I fear we fall far short in its application.

Dr. William L. Estes, South Bethlehem: This subject is of more than usual interest, and, if you will permit me, I will give an instance which supports the point Dr. Guthrie has so well made in his paper; viz, partial rather than complete removal of the excreting gland infected by tuberculosis. I had a case not long ago of tuberculous epididymitis on the left side. When I first saw the patient, I found on this side absolute degeneration of the epididymis and of the testicle also. I extirpated the testicle and all the tissues and the vas deferens nearly to the base of the bladder. A few months later the patient returned to show me a swelling in the other testicle. Examination showed a characteristic suppurating focus in this, his only testicle. The other side showed no further evidence of disease. I had had some experience in partial excisions for tuberculosis and had removed only parts of the testicles with more or less good results, so I said to him, if he were willing, I would attempt to save the gland. I accordingly cureted very thoroughly and dissected every particle of tuberculous material from the focal area. The site of the tuberculous detritus which had been removed was touched with pure carbolic acid neutralized with alcohol and packed with iodoform gauze. A rapid recovery with subsequent good function resulted. No recurrence has taken place three years after the operation, no return of the tuberculous process and the testicle seems to be quite well. What did occur, however, was a metastasis in the vas high up in the groin, a small suppurating area. This was three years after the focal extirpation in the testicle.

The other case was that of a young woman brought to me by a neighboring physician suffering from a tumor in the abdomen, which I was unfortunate enough to mistake for a cystic tumor, but found it, on opening the abdomen, to be tuberculous peritonitis, one of those cases one finds every now and then of matted, adherent intestines above and a large space in the pelvis filled by fluid. I employed the same technic recommended by Dr. Guthrie; namely, after emptying the peritoneal cavity, I gently sponged out the peritoneal spaces, and dried the cavity as thoroughly as possible. I found the ovaries and tubes were disintegrated and so soft that they could be torn if grasped with the finger and thumb. I, therefore, removed the tubes and ovaries. The peritoneum was studded and stiff with tubercles. The woman made a good recovery and left the hospital about four weeks after the operation, and at the present time is enjoying good health.

In those cases where the disease is absolutely localized, where you can cut it out there is no doubt that thorough extirpation will cure the disease. Again in that paradox in diseases, tuberculous peritonitis, simply opening and drying out the cavity gives results beyond anything we can hope for in any other form of tuberculosis.

Dr. Israel Cleaver, Reading: I wish to report a case of peritoneal tuberculosis upon which I operated a few years ago. I expected to find an ovarian cyst. To my surprise, I found nothing of the kind. It was, instead, an effusion of the serous fluid circumscribed by adhesions incident to diffuse tuberculosis of the peritoneum. On general principles I closed the wound, and the woman made a good recovery; now, two years after the accident, she is stout and in good health.

Dr. Johnston, closing: I have nothing to say, except to thank the section for the very courteous manner in which my paper was received, and to ask you to remember that the *x*-ray men see only your failures, and it is very natural that they should be somewhat prejudiced, but that is the truth of it; we see only the failures, the recurrences after operation for the different forms of malignancies and tuberculosis. It is nothing more than natural that some men should become somewhat prejudiced and decry the benefit of surgery. This is a mistake, and I endeavored to present as far as possible my views on the matter. Speaking of surgical tuberculosis or peritonitis, twelve years ago I saw an exploratory laparotomy in which the case proved to be one of tubercular peritonitis; nothing at all was done, the abdomen sewed up, and the man made a good recovery and is well to-day.

Dr. Guthrie, closing: In reference to operating for tuberculous peritonitis, the contents of the abdomen should not be handled. At the recent meeting of the British Medical Association in Toronto, great stress was laid upon the importance of preserving the endothelium, which corresponds to the epithelium on the surface of the body. No matter how much infection you find, by simply drying it up or mopping it out, and then closing up, without drainage, you will frequently get the best results.

I am very glad to have heard Dr. Johnston's experience on the use of the *x*-ray in the treatment of tuberculous glands, in which he recommends the removal of the primary manifestations of the trouble and afterward treatment by the *x*-ray.

Dr. Wilson, closing: Just a word in reference to the outdoor treatment of surgical tuberculosis. From an operative standpoint, it is a serious error to subject patients to the outdoor treatment prior to the operation, with the intention of preparing them for the operation. The result in the majority of cases will be that there will be no operation. Statistics gathered from many sources show what has been done in this direction. So radical have been the statements made with reference to the benefits received that many physicians have placed their reliance entirely upon the outdoor plan of treatment. I think that many of the statements are exaggerated. Possibly there is too much expected, especially in the well advanced cases. In cases of bone tuberculosis we should take proper surgical, as well as suitable mechanical and dietetic measures.

The Northwestern University has conferred the honorary degree of LL.D. on Dr. George H. Simmons, Chicago.

THE RELATION OF THE CARDIAC MUSCLE AND VALVES TO ARTERIAL TENSION.

BY WILLIAM B. STANTON, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The factors concerned in arterial tension are (1) the heart, (2) the arteries, (3) the vessels under the control of the vasomotor system, (4) the quantity of blood.

The heart and the arteries form the propelling force and the vasomotor system, the resistance. The pressure results from the heart working against resistance. As the heart works intermittently the arterial pressure is not a constant one. It is highest just following the heart beat and lowest just preceding the beat. The difference is produced by the contraction of the elastic arteries forcing the blood onward during the cardiac diastole. The flow in the capillaries is thus constant. The changes in pressure taking place within the arteries is well shown by a pulse tracing. The apex representing the pulse beat corresponds to the high or systolic pressure. The base of the descending limb corresponds to the low or diastolic pressure. Pulse pressure is the difference between the two. The mean pressure has been found to be equal to diastolic pressure plus one third of the pulse pressure. Thus, if the systolic pressure is 140 and the diastolic pressure is 110, the pulse pressure would be 30 and the mean pressure 120.

The normal, resting individual shows a systolic pressure of 115 to 140 and a diastolic pressure of 85 to 110. The blood pressure varies greatly under physiological conditions but the return to normal is usually rapid.

Pathologically, the arterial pressure can be increased or decreased either acutely or for a short period of time, or chronically over a prolonged period of time. Increase of pressure could result theoretically from (1) increasing the heart action with the vasomotor system remaining unchanged, (2) increasing the resistance when the heart would secondarily be excited to increased work, (3) increasing the quantity of blood. Practically increased tension always depends upon increased peripheral resistance as a normal vasomotor system adjusts itself to increased cardiac action. Increase in the volume of blood has little or no effect as has been proven repeatedly on animals.

The increased resistance which produces prolonged high pressure may be caused by a variety of conditions, the most important of which are arteriosclerosis and nephritis. While the inciting cause of the prolonged high tension is the peripheral resistance, the increased pressure is the result of secondarily increased heart action. The heart is compelled to do more work, to keep the blood pressure at a higher level, in order that the normal amount of blood can pass through the vital organs in the normal space of time. The heart in consequence hypertrophies. The degree of this hypertrophy depends upon the nutrition of the heart and the amount of extra work it is called upon to perform. With good nutrition the heart keeps pace with the increasing load, often for a long time, without showing symptoms except when some extra muscular effort is undertaken. When the limit of compensation is reached, symptoms appear,—dyspnea on exertion, cardiac asthma, pain. Eventually the right heart may be called upon. When this, too, fails signs of venous congestion appear as in valvular disease.

With poor nutrition the reserve power of the heart is soon used up and, hypertrophy failing, signs of lost compensation appear at an earlier period. While kidney disease is one of the most frequent causes of high pressure and consequent cardiac hypertrophy, under certain conditions there may be extensive kidney disease without increased pressure and without cardiac enlargement. In the series of blood pressure estimations now being made under my direction at the Philadelphia Hospital on cases of tuberculosis, the most marked urinary evidences in the way of albumin and casts are not accompanied by increased pressure. Thus in twenty-one cases that I have had time to analyze, the highest systolic pressure was 145 and only in eight cases was the systolic pressure 100 or over. The poor nutrition may explain this.

To recapitulate: Prolonged high arterial tension is caused primarily by increased peripheral resistance. The amount of this tension depends upon the reserve power of the heart and its ability to hypertrophy. The hypertrophy depends upon the nutrition of the heart.

Low arterial tension may be acute or chronic. Acute low pressure usually results from vasomotor depression as in shock or from loss of blood, though this when unaccompanied by shock must be very great. Certain drugs as the nitrites and certain infections may also cause low pressure.

Low tension lasting over a long period is usually due to lack of heart power. It is found in wasting disease and where the nutrition is reduced. Even when no disease is discoverable the pressure may be low. Then again, while the resting pressure may be within the normal limits, although on the lower boundary, the individual may be unable to keep up sustained pressure sufficient for continued work. The exact condition of the cardiac muscle in these individuals is not known, but cardiac weakness is undoubtedly present. The patients complain of being tired and unable to perform the usual amount of work. The typical clinical heart condition that I have found is as follows: When recumbent or after resting, the pulse rate is from 72 to 80. On standing, the speed goes up to 100 or even 120, a much greater change than is normal. The heart sounds are shorter and the two sound more alike. This I think is probably due to the rapid action and the consequent shortening of the long pause. On again lying down the speed lessens greatly and often a triple rhythm is heard at the apex with an apparently accented pulmonic second sound. After a short time in the recumbent position the triple rhythm is replaced by a long soft blowing systolic murmur, which is heard over the entire heart to the left of the sternum but not transmitted to the axilla. The point of maximum intensity is at the third left costal space near the sternum. On again standing the murmur disappears but can be brought out by rapid exercise, as walking up steps. I have seen this condition in a large number of cases. While most of the patients were young tuberculous women, they had no fever, no sweats, no evidences of toxemia. The hemoglobin was normal. The condition disappears on improvement. I have met with typical examples of this in men in whom there was no suspicion of tuberculosis. Here it has seemed to me the heart is at fault and there is probably a weakened contraction of the muscle so that the auriculo-ventricular opening is insufficiently closed. Case: D. K. Business man, forty-two years of age, complained of inability to do his usual amount of work. Heart was as given before. Blood pressure, systolic, 105, diastolic, 85.

The function of the valves in the maintenance of the circulation is to guide the blood in the proper direction and to prevent backflow. They must, therefore, be intact, properly controlled by the papillary muscles and the chordæ tendeneæ, and the openings which they guard must be reduced in size by the contraction of the surrounding ring of muscle. This latter is very important.

While the maintenance of normal blood pressure presupposes the presence of normal valves, the finding of a normal pressure is not proof that the valves are healthy. The reserve power of the heart and its subsequent hypertrophy may maintain a normal pressure in spite of serious valvular derangement. Blood pressure estimations have been disappointing in valvular disease on this account. Such estimations, when taken in conjunction with the complete physical examination, may be of great assistance in treatment. It must also be remembered that in the cases of valvular disease applying for treatment other conditions, as, kidney involvement, may effect the blood pressure.

Aortic Regurgitation. This gives the most striking blood pressure picture. Because the heart is large and the amount thrown out at each contraction is great, the systolic pressure is very high; while, because of the backward leak and the dilated capillaries, the diastolic pressure is very low. The difference (the pulse pressure) is marked. Cases: J. F., aged thirty-one. Breaking compensation, systolic pressure, 225; diastolic pressure, 90. L. R., aged forty-two. Breaking compensation, systolic pressure, 175; diastolic pressure, 95. C. I., aged thirty-five. Practically moribund with irregular heart. In taking the systolic pressure occasional pulse beats came through at 145—all of them came through at 120. This showed that there was a variation in the strength of the individual pulse beats. The diastolic pressure was 55.

The height of the systolic pressure depends upon the muscular power of the heart as well as the size of the leak. Where the damage to the valve is slight, the pressure changes are in proportion. Thus E. H., aged twenty-seven, with the characteristic diastolic murmur showed systolic pressure, 115; diastolic pressure, 85. There was almost no enlargement of the heart.

Complicating kidney disease by increasing the peripheral resistance greatly increases the work of the heart and consequently of the high pressure. It also increases the amount of blood regurgitated.

Aortic Stenosis. I have no records of certain cases of this kind. Theoretically, the systolic pressure would be low and the diastolic disproportionately high.

Mitral Regurgitation. The results of pressure estimations in this condition have so far been disappointing. Studies with the more accurate instruments which record both pressures will probably give more results. As long as the heart is able to compensate for the valve leak through extra work of the right ventricle the systemic pressure remains at the norm. The pulmonary pressure is increased. With breaking compensation, changes occur.

B. M., aged forty. Broken compensation ascites, etc., systolic pressure, 95; diastolic pressure, 85. The same case with recovering compensation, systolic pressure, 115; diastolic pressure, 85. Mitral regurgitation secondary to increased peripheral resistance as in nephritis shows a different picture. The heart has done extra work for a long time. The pressure must be higher in order to supply blood to the tissues. Thus, J. P., aged forty-two. Nephritis and mitral regurgitation. Systolic pressure, 160; diastolic pressure, 100. Even with this high pressure he showed dyspnea on exertion.

Mitral Stenosis. The pressure remains at the normal as long as the right heart overcomes the resistance at the mitral valve. With breaking compensation the pressure is about as in the mitral regurgitant cases. I have no notes of cases of right-sided heart disease.

DISCUSSION.

Dr. John A. Lichty, Pittsburg: Dr. Stanton said that in some of the cases of tuberculosis which had albumin and casts the blood pressure was low. In addition to the explanation which he gave of poor nutrition, it seems to me that the albumin and casts in a febrile condition as we find in tuberculosis have a different significance from what they have in a nonfebrile case. I have noticed this in typhoid fever where blood pressure was normal, when albumin and casts appeared, no change in the blood pressure occurred. While not evidence of acute nephritis, I think they indicate the condition of the kidney due to the toxemia which does not show on the blood pressure.

In all those heart cases in which there is beginning loss of compensation, there is surprisingly low blood pressure, and while it may not be of any significance to take the pressure in these cases, yet to me it always seemed to point the way of giving some certain stimulation and giving it without any fear. While we do not seem to see very much in the use of the blood pressure instrument in heart cases, I think that these studies which Dr. Stanton has made should be elaborated and followed out, and some day I believe they will be of use in indicating treatment.

Dr. Guy Hinsdale, Hot Springs, Va.: I should like to refer to a case in which the estimate of blood pressure was valuable in prognosis. The case was one of arteriosclerosis with a high grade of chronic renal disease and albuminuric retinitis. The blood pressure rose during one week from 255 to 300 mm. and an unfavorable prognosis was given. The man was restless, became gradually comatose and died in just one month afterward, aged 52. The whole aspect of the case viewed from the standpoint of high arterial pressure and renal disease was bad as to prognosis and this was verified by the result.

Dr. Stanton, closing: In many cases there was not only toxic evidence of kidney insufficiency, but the kidneys themselves showed actual change, either chronic, interstitial or parenchymatous type. In regard to typhoid fever with albumin as casts in the urine, it has been said that the nephritis must be present for at least four weeks before hypertrophy of the heart and increased tension occur. Another reason why we should not find it in typhoid fever is because in typhoid fever and pneumonia the toxins act by depressing the vasomotor center. This would tend to reduce the blood pressure.

We do find the low blood pressure in the heart cases when the compensation is broken, but there must be a certain amount of pressure to carry on life.

THE DIAGNOSIS OF BRAIN ABSCESS AS A DEPARTMENT OF GENERAL MEDICINE.

BY JOHN W. BOYCE, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In considering the difficulties that always attend this diagnosis and the final disappointments that are so frequent, it would seem that the general practitioner might well be content to throw it onto any willing shoulders. This view has been accepted by text writers, if we may judge by the scant space accorded the subject in the works on general medicine. The fact that focal symptoms must always be diligently sought for, and carefully weighed, points out the neurologist as the appropriate victim. Special works on neurology deal fully with the subject, and in the main, satisfactorily. In the department of diagnosis, however, they are apt to devote themselves to a consideration of those principles by which we may discriminate between abscess, tumor, sinus thrombosis and meningitis. It is my present object to point out that this question is never of primary importance, and seldom of primary difficulty. I would be far from deprecating the employment of time, care and special skill in arriving at that precise diagnosis which alone can be called scientific. Yet it is evident that three of the conditions mentioned call urgently for surgical intervention, and that the fourth, while hopeless in the surgeon's hands, is equally so for any one else. On the practical side, the patient might well be satisfied with the diagnostician who could say definitely whether there was or was not an organic lesion within the skull. I hope to prove by analysis of cases personally seen, that this is the very problem which it is most difficult, as well as most important to solve. In nearly all of them, operation was to some extent exploratory, that is, in advising it, I was in considerable doubt as to whether anything would be found. But in every case I was pretty certain as to which it would be, if there were anything.

Case 1. Several years ago a colored boy, aged twelve, was brought to the Western Pennsylvania Hospital with a history that he had been ailing for about two weeks with headache, general malaise, and feverishness; that one week before, he had become delirious and had gradually sunk into the state of semi-stupor, in which I found him. He came in as a case of typhoid, and after such routine examinations as a young and enthusiastic assistant felt called on to make, nothing was found at variance with this hypothesis. This was before the time of the Widal test, and when the leukocyte count was not as thoroughly appreciated as it is to-day. It was even more true then than now that every hospital case was typhoid until we could prove it something else. Fortunately, as I was turning from the bedside, the boy chanced to roll his eyes to the left, and it was at once evident that there was complete paralysis of the external rectus muscle in the left eye. His mother was called and further questioned, but said she had never noticed his squinting. He had had a discharge from the left ear since early childhood, which had ceased about the beginning of this illness. The boy had never complained of pain in the ear, nor of localized headache. An otologist of standing was called in consultation. He recognized an old suppurative otitis media; did not dissent from my diagnosis of abscess, but advised against operation, for reasons that were, no doubt, good. At any rate they prevailed. The boy lived five days longer without developing any symptom of interest.

Autopsy was refused, but a resident did a hasty trephining with the connivance of an undertaker, and obtained half an ounce of pus from the middle fossa of the skull. It was probably extra dural though the resident who did the trephining believed it came from within.

Case 2. This is one of Dr. Chevalier Jackson's cases. The mental condition I described in my bedside notes as follows: "Patient lies in a somnolent condition; may be sufficiently aroused to understand questions, but there is evident obscurity of intellect, and great difficulty in holding his attention. He sometimes begins a sentence correctly and intelligently, but wanders off into meaninglessness before finishing. In some instances he performed an act as requested while his attention was held, but continued to do it automatically or in response to a request for some other act, when attention had wandered. The mental state corresponds exactly to that described by MacEwen in a number of his cases, which he seemed to look on as to some extent characteristic."

While the diagnosis might have been made without it, a very important symptom was a paresis of the side opposite the lesion. The interest of the symptom being that on account of the mental state it had escaped several days of skilled observation, and remained doubtful even when especially looked after. I placed an unskilled and consequently unprejudiced observer at the bedside with a paper ruled for the right and left sides, and told him neither to touch nor address the patient, but to note down every motion as it occurred on the corresponding side of his record. In the course of fifteen minutes the patient had wiped off his mouth, tried to button his nightdress, and draw up the bedclothes, all with the left hand, while nothing but aimless motion had occurred in the right hand, which for the most part lay still and slightly contracted.

The pulse tension at this time registered 172 mm., taken with a narrow armlet, and obviously was of no diagnostic aid. After evacuation of the abscess, however, it fell to 150 mm. In the course of three days it had gradually climbed to 178 mm. As the general condition of the patient was unsatisfactory, this single symptom seemed to justify further exploration, which resulted in the opening of a pocket of pus which had become closed off from the general drainage cavity.

Case 3. The third case I have to mention is also Dr. Jackson's and on record in detail in the *New York Medical Journal* for June 23, 1906. The diagnosis presented such features of peculiar interest that it seems worth discussing at some length. The patient had had middle ear trouble, with mastoid involvement for which a radical operation had been performed. He had been sent home with a clean, granulating wound, and every prospect of smooth convalescence. He was readmitted after two days with a history that he had seemed queer on going home. On the morning of readmission, he had suddenly become unconscious while alone, and had had four general convulsions before arriving at the hospital. These convulsions had been witnessed only by unskilled and highly excited bystanders, and, when I saw him, he presented a fair picture of acute confusional insanity. Voluntary movement and reflexes seemed equal on the two sides, pupillary reflexes being rather sluggish. The face and head were noted as asymmetrical. It was said that the patient had always been peculiar. He had been much annoyed during the convalescence by his fiancée who is a Christian scientist and by domestic trouble. The pulse tension was 80 mm., which we regarded as low, though subsequent observation has shown it to be the normal standard in this particular individual. The diagnosis was held in suspension, but in retrospect it seems we should have been justified in regarding it as a case of postoperative insanity, despite the history of convulsions.

Ten grains of calomel were administered; the patient slept soundly all night, and awoke perfectly rational. This was not the slight degree of better or worse that may be observed from time to time in any mental condition, but a complete disappearance of all symptoms. He was amused that he could not remember any of the incidents of the day before, and laughed with me over the excitement that had been occasioned. By this time we had a report of a urinary examination, showing a great excess of indican, and I gave up any suspicion of organic disease. This improvement I can in no way account for, and I have not seen such a possibility mentioned in literature. It is a source of great regret to me that I did not carefully examine him on this day for optic aphasia. The man's general condition did not seem to call for medical attention, and I entirely ignored two symptoms which should have been of value. A peculiar, foul odor of the breath which Dr. Jackson even then declared significant of abscess, I attributed to intestinal toxemia. A leukocytosis of 17,500, I, with similar airy confidence, referred to his previous mastoid trouble.

Subsequent observation has taught me that after a clean mastoid operation, the leukocyte count falls at the rate of about 1500 a day, and that by this time, the patient's count should have approximated normal. The failure of such a fall would not in itself justify operation, but the fact that it does not occur, should never pass unregarded. A careful examination at this time along the lines indicated, together with due respect for Dr. Jackson's acute olfactory nerve, might have led me to a diagnosis which might well be called brilliant.

For three days the patient continued in excellent condition except for moderate pain above the eyes and the left side of his forehead. On the fourth day, on account of failure of appetite, he was put on light diet. On the sixth day, his mind was again confused; pain in head became severe. In the evening while taking calomel, he vomited a little. Next day, mental condition was slightly improved. Eye grounds were examined and found normal. About noon he vomited a second time. Pulse tension had been slowly rising, and now stood at 118. On the eighth day in hospital, his mind seemed clear. There was some difficulty in expression. I now made the examination that I should have made before, and developed an exquisite instance of a symptom, which is particularly well described by Starr, and which has been variously called optic aphasia, intercortical sensory aphasia, sensory amnesia, and aphasia of conduction. It is a condition in which objects are recognized, but the visual image does not call up the memory of the name. It is attributed by Starr to the cutting off of an association tract, and it is most valuable not only for the diagnosis of abscess, but also for its localization in the subcortical zone of the left temporosphenoidal lobe. This patient could not name my watch when I showed it to him, but read the time correctly. A pen he called a "poindon"; a bottle, a "womn"; a rose, a "flower," pressed as to what kind of a flower, he said it was "a sort of mosette," but was evidently dissatisfied with the word. He would not attempt to name a key, when I asked him if he knew what it was used for, he answered impatiently, "Yes, I know what it is, but I don't know what it is." After this he lay with the back of his hand to his forehead as though exhausted by intellectual effort. All this, be it noted, in a man who could express ideas with sufficient fluency that a stranger would not have suspected any trouble. The diagnosis being plain enough, operation was performed, and an abscess of moderate size evacuated.

The blood tension which had been 118, fell below 90 on the day after operation. The next day it was 115, but on the next was down again to 95. On the sixth day after operation the tension stood at 118 in the morning; 122 in the afternoon, a trifle higher than it had been before the first operation. Some slight improvement in the general condition occurred immediately after the first operation, but did not continue. Further exploration seemed justifiable and disclosed an entirely separate and, in my opinion, newly formed abscess cavity. The patient made a good recovery. His subsequent history is rather stormy, but does not bear on the diagnosis of abscess.

Case 4. The fourth case is a recent one of Dr. Day's, not yet reported. I shall merely take up some of the diagnostic points.

After a radical mastoid operation, the patient's general condition became worse instead of better. Pus made its way out between the edge of the bone and the exposed dura. It was traced back by clipping away the bone with a rongeur, and a cavity full of stinking pus discovered within the brain substance.

A point of interest is that, in spite of the quantity and character of the pus, leukocytosis failed utterly. One count showed 7750 white cells per cubic mm., and another two days later, 6600. A paresis similar to that of the second case I have cited, had probably escaped skilled observation for some time. The left arm lay limp, and its general appearance suggested that it had for some time lacked normal muscular tone. There was a distinct difference in the volume of the pulse on the two sides, and the anesthetist declared positively that this had been present at the time of the mastoid operation.

The chief interest in the case for our present consideration lies in the fact that he had been examined by a most skilled neurologist who gave an opinion that his symptoms were due to systemic infection, and that he should be referred to a general practitioner.

Case 5. A colored girl was admitted to the Eye and Ear Hospital on January 3, with middle ear trouble, for which incision of the membrane was immediately performed. When I saw her twelve days later, she was in a state of delirium, very suggestive of hysteria. The temperature range, however, ruled out such a diagnosis. She evidently had severe localized headache. The pulse rate corresponded with the temperature, and there was no increase of pressure. There was no focal symptom except a slight internal strabismus, which was possibly preëxistent. Her general appearance suggested sepsis, or rather pus absorption, and the leukocyte count of 17,000 enforced this suggestion. I may say that later there appeared such pain and swelling of the shoulder joint as we are apt to get in absorption cases. The form of temperature curve was so suggestive of sinus thrombosis that I would certainly have advised the comparatively safe operation of exposing the sinus but for the fact that this had already been done with negative result. The question, was there sufficient probability of abscess to justify us in cutting into the brain in search of it, then occurred. My decision in the matter rested on the fact that while the patient was seriously ill, she had that indefinable aspect that leads us to believe the prognosis is good even if diagnosis is uncertain. A few days' observation strengthened this opinion, and the result confirmed it The patient's temperature steadily declined to normal. She left the house with a granulating wound over the mastoid, on February 19, 1905. On August 20, 1906, she reported herself as still in perfect health. This seems to justify our handling of the case, though we must still consider the theory that there was an abscess of the brain which became incapsulated, and which may yet give trouble. In any event, it is plain that our attempt to discriminate by temperature type, absence of focal symptoms, etc., between sinus trouble and abscess, was time thrown away, and that, instead of throwing light on the proper path, it led us deeper into the mire.

Case 6. A child of nine months had left middle ear disease as the sequela of measles. Perforation occurred on April 9. A week later swelling and tenderness were noticed behind the right ear. He was admitted to the Eye and Ear Hospital, April 20, for operation on the right mastoid. The temperature chart was typical of sinus trouble; the leukocyte count was 23,000, and the baby grew steadily worse. On April 25, I saw the child and examined the lungs, because of doubts suggested by the surgeon in charge. No physical signs could be elicited. Two days later, the left mastoid was opened and found full of pus. No improvement resulted, the child growing steadily worse. His temperature continued, still of the sinus type. There was very slight cough, nor had the pulse-respiration ratio been appreciably disturbed. The child had not, to my eye, the appearance typical of one suffering from respiratory trouble, and I, therefore, excluded disease of the lung as the cause of the temperature. In this I was confirmed by the family physician, an able and competent man who was seeing the patient twice daily. It was very easy to say that if there was trouble within the brain, it was sinus thrombosis, and neither abscess, tumor, nor meningitis. I believe that it was this very fact that led me to ignore the more important fact that in a child of that age physical signs of respiratory disease are more often than not fallacious. As no improvement resulted from the cleaning out of the second mastoid, I insisted on a thorough exploration of the sinuses on both sides. Absolutely nothing was found. The child died about ten days later. Shortly before death, extensive pneumonia was recognized. At autopsy, we found as expected, pneumonia of four or five days' duration, and, what was still more important (as probably the primary trouble), a septic pleurisy of the right side, the fluid exudate being incapsulated and limited to the mediastinal surface of the lung and nowhere in contact with the chest wall. In the opinion of the pathologist, this was old and probably present at the time of my first examination. I am unable to deny this, as it is quite evident that such a condition would have given no physical signs. A consideration of the pulse-respiration ratio suggests that the first respiratory trouble began on April 28, immediately after the second mastoid operation. But whatever theory we may adopt, it is very evident that no application of neurological principles would have saved me from this serious and humiliating error, the least excusable, I think, that I have ever made. Had I been right in excluding lung trouble, I would have considered the exploration entirely justifiable in spite of the negative result.

Case 7. This is a case of Dr. E. W. Day's, who will, I trust, put it on record in great detail. The surgical considerations, which I now pass by as not material to our present consideration, are most interesting. And the happy ultimate result is an extreme instance of the way in which the gods will sometimes most unexpectedly reward a surgeon's courage in the face of a forlorn hope. M. P., a boy aged fifteen, was admitted to the

Eye and Ear Hospital, May 16, for middle ear and mastoid trouble. He seemed very weak and stupid, and so continued in spite of a thorough cleaning of the mastoid. Three days later I saw him, and could not come to a sufficiently definite opinion to advise operation, but arranged to see him the next day, as I strongly suspected abscess. That afternoon, however, during the dressing of the mastoid wound, pus was found oozing out through the dura, which had been exposed at the first operation. The opening was enlarged and traced into the substance of the cerebellum. With free drainage, the patient improved, but ten days later was found in a state of semi-stupor, and seemed to be urgently ill. He had, however, severe pain and tenderness in the left upper quadrant of the abdomen, and extreme rigidity of the muscle, A general surgeon was called in the attempt to exclude splenic or subdiaphragmatic abscess. This exclusion could not be made, but two days later the stupor was deeper, and the pulse of so distinctly a cerebral type that Dr. Day determined to search for more pus in the brain. By chiseling away a considerable portion of the posterior surface of the petrous bone, he evacuated a separate pocket connected with the one first found, but so far separated as not to drain freely. Some improvement of symptoms resulted, but in six days more the cerebral pulse and stupor were again well marked. A definite opinion was given that there was pus shut up somewhere in the brain. The cerebellum was accordingly attacked directly through the trephine opening, posterior to the mastoid wound. A free incision was made, admitting Dr. Day's forefinger, and it developed that the whole right half of the cerebellum was but a shell of brain tissue inclosing a pus cavity. A large drainage tube was inserted, and the patient returned to bed. Our hopes of improvement from this freer drainage were disappointed, but it was still plain and certain that there was pressure some place within the skull. Dr. Day, guided only by the doctrine of chance, exposed the temporosphenoidal lobe as the most likely seat of a second abscess. The pus which I had diagnosed (on the strength of the evidently increasing cerebral pressure) was not found, but the first plunge of the explorer encountered the dilated lateral ventricle at a depth of not more than half an inch, and the cerebrospinal fluid poured out like a mountain spring from under a rock.

The patient made marked improvement, regained his normal weight, and was able to be up all day. Since the above was written the mastoid of the other side became inflamed and required operation. The patient is, therefore, under treatment in spite of the excellent result in the cerebral lesion now under discussion.

For sake of completeness, I shall mention two additional cases, each seen once only, in consultation. The first had been diagnosed meningitis, but I was asked to see it because of the suspicion that it might be abscess. I had no hesitation whatever in excluding abscess, mainly on the fact that there was complete stupor and a complete localized hemaplegia, without the pulse for any other symptoms of increased cerebral pressure. This seemed to me to exclude both abscess and meningitis, and the whole course of the disease to a fatal termination was consistent with the diagnosis I made of acute hemorrhagic encephalitis. No autopsy was permitted, however, so the diagnosis of this rare and interesting condition can not be said to be positive.

The last case I was also asked to see, because of a suspicion of abscess. I had no hesitation in excluding this condition, and advising against exploration. The diagnostic problem seemed to me to lie between gumma of the brain, and autotoxemia from a dead fetus. At autopsy the former supposition proved to be correct.

It is evident that in all of these cases the important question was not to distinguish between abscess and thrombosis, and tumor and meningitis, but to say whether any of these lesions were present. It is often not possible to make with precision the diagnosis between these different conditions. And, at the bedside, surgeons do not demand that we absolutely diagnose or locate abscess. They will operate and explore if only we will say there is such strong probability of organic lesion within as will justify them, and to this point our attention should be directed. For answering this question, causation is most valuable to us. When there has been a traumatism of the head, or an infection in the middle ear, mastoid, or other recognized path of entrance to the cranial cavity, and when such symptoms, either cerebral or general, as threaten life, develop, we are justified in exploring if we can exclude conditions elsewhere to account for the symptoms. But this is a very large *if* indeed.

Consider how closely my first case simulated typhoid, and remember that even with the Widal test, the diazo test, and the leukocyte count, it is never possible to absolutely exclude typhoid fever for a period of, at least, two weeks. Consider how closely the fourth case, with its low leukocyte count simulated some form of septicemia until the paresis was recognized. The second case might very well have passed for insanity, and the third case undoubtedly would, had the patient chanced to have had his convulsions while alone. Considering the improvement in symptoms made by ten grains of calomel, the foul tongue and breath, the increase of indicanuria, it seems to me not at all surprising that I made a diagnosis of intestinal toxemia. Suppose this case had gone the course that many such do, with dullness of intellect, vague, indefinitely localized headache, occasional vomiting, progressive emaciation, and the development of an icteroid hue, the diagnosis might very easily have remained unchanged until the end. The focal symptom of optic aphasia, which was the leading one in this case, and would perhaps in itself suffice for a diagnosis, is probably frequent in abscesses of the left temporosphenoidal lobe, but a very slight degree of mental impairment will prevent us from recognizing it. But it is evident that in all these four cases there were present sufficient focal symptoms for a positive diagnosis. In three cases they went for an appreciable time unrecognized. In the first case they were discovered purely by accident after I considered the examination completed.

Of individual symptoms that are of importance, we think first of temperature. Any departure from normal is of importance to us as excluding merely psychic conditions, but beyond this, the temperature chart will not lead us. Neither a high nor a low, a continuous nor a remittent temperature will either establish or exclude abscess. Subnormal temperature is suggestive of abscess, but only suggestive.

Observation of the pulse is important. It seems to vary directly with general cerebral tension. I may say, however, that consideration of tension is most important, and it is only in this department of practical medicine that I consider a sphygmomanometer an absolutely indispensable instrument. The first observation tells us nothing, but steadily rising blood pressure is almost of itself an indication for operation. Two of my cases illustrate that this is so, even after an abscess has been evacuated.

The leukocyte count is always of value, but may signally fail to lead us right in any individual case. The mental state is often characteristic, and will perhaps lead a man experienced in alienism to advise exploration, but experience must be very large indeed in this and similar lines before he can do so. If the mental condition permits them to be tested, various forms of aphasia may be discovered, and will usually prove decisive. Absolute paralyses are, so far as I can judge from my reading, rather rare, the motor area being an unusual site of abscess. My own experience shows that a hemiparesis may occur, and suggests that it is more frequently present than recognized in temporosphenoidal abscess. In searching for it, the observer must be on his guard against being misled by a slight difference of the motion on the two sides of the face. Emotional expression is more frequently asymmetrical than even physicians are aware. It is found in a considerable proportion of all hospital patients. Even the Venus of Milo had a crooked face. The hemiparesis is perhaps better determined by the proceeding adopted in Case 2, than by more scientific methods of examination.

Nine cases though successive and unselected are not sufficient ground for dogmatism. But when in every one the diagnostic problem was to say whether the symptoms might not be accounted for by systemic infection, or by noncerebral lesions, it should be sufficient warning to the general practitioner that he can not wholly shift responsibility in this matter to the neurologist. The most difficult and the most important work is to recognize an urgent condition and to remember the possibility of abscess. It is evident that the danger of diagnostic error in all my cases lay not in the misinterpretation of distinctively cerebral symptoms, but in the overlooking inconspicuous symptoms whose presence and import were plain once they were looked for. When cerebral symptoms are present however, a most difficult problem often remains. The otologists are familiar with the fact that many symptoms which seem absolutely diagnostic of organic lesion, clear up after a simple mastoid operation. In one recorded case optic neuritis is said to have done so. Explanation is most difficult. For an ultimate solution of this puzzle we must look to the otologists for the reason that they see the cases in the greatest number. When they solve it, they will also throw a flood of light on the peculiar effect that toxemia in general may produce on the nervous system. The important syndrome, meningism, is now under study. When the concept of such a syndrome is fixed in the general mind it will undoubtedly be found of importance in every department of medical science. But in the present state of our knowledge we must recognize that a thorough cleansing of the mastoid antrum is often a preliminary step in the diagnosis of abscess by exclusion. In the course of such an operation the lateral sinus should be exposed and inspected. The picking away of bone from uninjured dura involves a danger about equal to that of an incision through skin and muscle. If in spite of such operation serious symptoms continue, and we can exclude distant lesions adequate to cause them, we must, I believe, accept the principle of exploration here as thoroughly as in the abdominal cavity. In the absence of localizing symptoms we may consider the causation and the doctrine of chances, and examine the most frequent sites in order.

This account of my limited experience is probably a fair sample of abscess as it presents itself in the course of general practice. In reporting it I have no disposition to lift any burden from the neurologist, but rather to impose a heavy one on the shoulders of the general practitioner. Both the importance and the difficulty of the subject demand that we use every particle of available knowledge, either general or special. But he is a very poor doctor who would sit calmly by his patient until some one hangs up a nice blue placard legibly lettered, "This is an interesting case of cerebral lesion." And if he does so the declaration of an obliging specialist that an exact diagnosis could not have been made earlier, will not cleanse the record. For exact diagnosis confirmed by the autopsy is doubtless a fragrant offering to the spirit of pure science, but scant food for the insistent and reasonable demands of modern practice.

DISCUSSION.

Dr. William G. Spiller, Philadelphia: In most of the cases of brain abscess that I have seen, the abscess was caused by purulent otitis media. I agree with Dr. Boyce that the difficulty of diagnosis between cerebral tumor and abscess may be very great. If the symptoms justify a diagnosis of abscess, operation is imperative, for there is no possibility of recovery without it. It is important to remember that an abscess outside the dura in the posterior cranial fossa may give nearly the same symptoms as one within the cerebellum. I have seen, with Dr. Randall, a case in which pus was found outside the dura, and we were in doubt as to whether the brain should be exposed or not. It seemed advisable to wait awhile, and the boy recovered without further operation. It is often difficult to say whether the abscess is in the temporal lobe or in the cerebellum. When it is in the temporal lobe of the left side we have certain diagnostic symptoms. There may be word deafness, but occasionally the abscess is too low in the temporal lobe to affect the center for word hearing; or the patient may be left-handed, in which case the center for word hearing is likely to be in the right temporal lobe. If the lesion is in the right temporal lobe in a right-handed person, it is usually difficult to determine its situation, as this is one of the most silent areas of the brain. Some evidence exists showing that a lesion in the temporoöcciptal lobe may produce optic aphasia.

Dr. Charles K. Mills, Philadelphia: The diagnosis of cerebral abscess for the purpose of operation is, of course, a most important matter both to neurologists and surgeons. I have had opportunities of testing not only my skill, but lack of skill. I have been impressed with the fact that the diagnosis of cerebral abscess is one largely made by a close study of the focal symptoms plus the indications which point to middle ear or other purulent disease and plus the absence of indications which point to sinus thrombosis or tumor. I have frequently studied cases in conditions of insensibility with reference to the presence of focal symptoms. This study is often overlooked, yet any experienced neurologist knows that a critical study of a patient who is unconscious will enable him to fix upon certain symptoms which are outside, so to speak, of the sphere of self-conscious symptomatology. You may have an abducens paralysis; you may be able to observe conjugate deviation and bring out certain reflexes, etc. I am sorry I can not agree with the author regarding the offensiveness of the breath as a diagnostic symptom.

With reference to the naming center, the idea of such a center, which I have adopted and expanded, originated with Sir William Broadbent. My own view is that in the mid-temporal region is an area, destruction of which will cause the symptom which we know as word dumbness, or optic aphasia. Therefore, if you have in a case with left-sided indications this symptom and other symptoms of a certain sort absent, perhaps word deafness and motor aphasia, it is of great significance in making the diagnosis. It should be remembered, however, that we have word dumbness from lesions in various parts of the zone of speech. You may have it from a lesion of the anterior temporal lobe. You may have it from half a dozen lesions in half a dozen different positions in the cerebral hemisphere. It is only necessary for the diagnostician to bear in mind the history and symptoms in order to indicate the position of the lesion. The paper is interesting and the whole subject one of practical importance.

Dr. Boyce, closing: What has been said applies to brain abscess as it comes to the neurologist. The point I desire to make is that many patients having brain abscess may, and doubtless do, die and the practitioner never suspects there is anything for the neurologist to do. This might have happened in any one of my cases. It would have been easy to overlook the fact that the patient was essentially a nervous one. In more than one half of my cases this fact either had been overlooked by some one else or was overlooked by me for a certain number of days after the patient came under my care. I think Dr. Spiller will bear me out that there is a stage in almost every case of abscess but it is possible to say that the probability where it is not possible to make a diagnosis, of abscess is so strong that one may be justified in operating, and that course is less dangerous than waiting for a diagnosis.

It has occurred to me that the stupor is often due to increase of pressure in the cranial cavity and that if we draw off as much of the fluid as possible we shall get an interval of consciousness in which to examine for focal symptoms. I have never had a case in which I felt justified in doing this, but it has seemed to me possible.

The Commissioner of Internal Revenue has ruled that physicians prescribing intoxicating liquors not compounded into medicines and filling the prescription themselves are liquor dealers and must pay the federal liquor dealers' tax of $25 a year.

PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA.

BY ALFRED C. WOOD, M. D.,
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(Read before the North Branch of the Philadelphia County Medical Society, December 18, 1906.)

It is well at the outset to have a clear understanding of what is meant by stricture of the urethra. So many different conditions are included under this title, by various authors, that without some qualification the subject would be unnecessarily confused. According to some writers, any condition that interferes with the introduction of a full-sized instrument, or with the normal flow of urine, is called stricture. Thus an abnormally small meatus, spasm of the compressor urethræ muscle, encroachment upon the lumen of the canal due to inflammatory swelling, periurethral abscess, etc., have been classed as strictures.

Many authors, after describing the above conditions as strictures, explain that they are not really such, but, for convenience, are so classified. They could be much more accurately, and quite as conveniently, described as "congenital narrowing of the meatus," "reflex spasm of the compressor urethræ muscle," "inflammatory swelling," etc.

In looking over text-books for a definition of stricture, the following is selected as fairly typical: "A temporary or permanent narrowing of the urethral canal, caused by organic changes in the tissues which make up its walls, or by muscular spasm."

As already indicated, I would eliminate any temporary obstruction to the urethra from the class of strictures, as I would also muscular spasm. Neither of these could properly be said to be due to organic changes. As the urethra in the condition of rest is a closed canal, I prefer not to speak of the changes alluded to as narrowing.

My definition of stricture of the urethra would be: "A deposit of fibrous tissue in and about the wall of the urethra, due either to inflammation or injury, and interfering with the normal dilatability of the canal." Inflammation may be considered as playing an important part in all cases, for, even in the event of a wound of the canal, the irritating properties of the urine and the constant presence of germs would almost invariably establish more or less inflammatory action.

This definition would not include a congenitally small meatus, but it would embrace pathologic contractions, the result of inflammation, as from balanitis, or from the healing of a chancre, or chancroid. It would exclude congenital strictures, unless we assume these to be due to intrauterine inflammation, but they are of such rare occurrence that they may be practically disregarded. It would not comprise obstructions due to muscular spasm, or the so-called inflammatory stricture, which is also of rare occurrence, and which subsides in a short time without leaving any trace of real stricture.

I would treat that form of stenosis called inflammatory stricture under the heading of acute urethritis. The spasmodic contraction of the compressor urethræ is frequently due to a stricture of large caliber, or other lesion of the urethra, or to reflexes originating elsewhere, principally in the rectum or anus.

The diminished dilatability at any point of the urethra should be pronounced, in order to justify the diagnosis of stricture. It is important to bear in mind that the urethral canal does not possess a perfectly uniform degree of distensibility throughout its whole length, but that the urethrometer will show a variable caliber at different points. A trained hand, however, should distinguish between normal and abnormal irregularities of the canal.

According to the definition given, all true strictures of the urethra are due either to injury (hence called traumatic) or to inflammation. The typical traumatic stricture is that observed in the membranous portion, or at the bulbomembranous junction, and results from the urethra being crushed in falls astride a sharp object, from tearing due to disjunction of the symphysis pubes, or fracture of the bone in this vicinity. Traumatic strictures may also be caused by injury to various other portions of the canal.

The two features which distinguish traumatic strictures from those of inflammatory origin, are that the former develop with infinitely greater rapidity than the latter, and that as a class they are not amenable to treatment by gradual dilatation, *i. e.*, they require cutting. The lesson which I think should be drawn from this fact is that in treating diseases of the urethra the utmost gentleness of manipulation and of applications should be the invariable rule, because a mild inflammatory stricture may easily be irritated, and caused to assume the character of a traumatic stricture.

The great majority of strictures of the urethra are the result of inflammation, which is induced by gonorrheal infection. It is quite certain, however, that a simple urethritis may result in stricture formation, and it is equally established that the application of caustics or irritating injections may bring about the same result. I am convinced that a portion of the work of all genitourinary specialists consists in an endeavor to remedy conditions left from indiscriminate cutting, excessive divulsing, and injudicious cauterizing.

As that form of inflammatory stricture which results from gonorrheal urethritis is the commonest, it is proper to devote special attention to its pathology. The introduction of the gonococcus into the urethra establishes at once a catarrhal inflammation. This means that the epithelial layers and the basement membrane become hyperemic and edematous, and hypersecretion of mucus with exfoliation of the superficial cells follows. Owing to the ability of the gonococcus to penetrate the deeper layers of the membrane, the infection spreads to the submucous connective tissue, and even to the periurethral structures. In the most severe cases, the process extends to the spongy body. In order to resist the advance of the germs, the usual hyperemia with dilatation of the capillaries and outwandering of white blood corpuscles, observed in all inflammatory processes, occur around the inflamed mucous membrane. The more severe the infection, the greater the efforts of Nature to limit the spread of the disease, hence the greater the congestion and outwandering of white blood corpuscles. The connective tissue corpuscles multiply rapidly and add to the exudation. In other words, a round-celled infiltration or wall is established for the purpose of protecting the adjacent structures from further inroads by the invading germs. An innumerable number of these cells die, forming pus corpuscles, which in a very few days change the discharge to a purulent character. Whether this deposit of new cells will result in stricture or not, depends upon subsequent developments. If the urethral inflammation is treated promptly and efficiently, the exudation may be gradually absorbed, the epithelium become restored, and the conditions may approach very nearly to that which exisited before. If the inflammation is protracted, this infiltration increases. The round cells in time become converted into spindle cells, and these into fibrous tissue, the tendency of which always is to contract, and, as it encircles the urethra in whole or in part, as it contracts, it naturally interferes with the distention of this otherwise elastic canal. Sooner or later the inflammatory symptoms disappear but this dense fibrous deposit remains, and, as the tendency of all such tissue is to contract and to keep on contracting, a stricture forms.

There has been a rather long discussion regarding the actual cause of this deposit of fibrous tissue. I will not occupy time by a detailed reference to this phase of the subject, but I can not think that there is any essential difference in the inflammatory processes in the urethra, or the results thereof, from those observed in other parts of the body, excepting in so far as special conditions may modify these phenomena to some extent. I have been impressed with the similarity between stricture of the urethra and stricture of the appendix. I have seen strictures of the latter from the earliest beginning to complete closure of the lumen. They are single or multiple, and in all respects I think are comparable to the same condition found in the urethra. The process here is evidently a catarrhal one in the beginning. The inflamed epithelium allows germs, usually the bacillus coli, to penetrate. This excites a reactive inflammation similar to that already described, and a distinct mass of fibrous tissue or a stricture results. In both cases, the amount of scar tissue is in direct proportion to the virulence of the irritant and the vigor of the reaction caused thereby, and depends also on the length of time that the irritation continues. The process in either case is identical.

The view expressed by some, that too rapid resolution of a gonorrhea is apt to result in stricture, is contrary to all known pathology, and can not be accepted. The analogy in the formation of strictures of the appendix and of the urethra does not apply to the results in the two cases. In the former, the condition may become quiescent, or the canal may be closed in whole or in part, resulting in what is known as appendicitis obliterans; a certain number, however, come to operation on account of continued or recurring inflammation.

In the case of the urethra, on the other hand, a stricture, when once established, is progressive. There is no tendency to spontaneous recovery. The development may be very slow, extending over years, but it is certain to continue.

The impact of the stream of urine and the friction caused by its passage add to the irritation, and hence add to the trouble. As a result of the increased resistance to the urine caused by the infiltration, the urethra behind this point is gradually dilated, the mucous membrane is stretched and attenuated, and the fermentation of the drops of urine that remain in this pouch gradually lead to ulceration. This ulceration or chronic catarrh is the source of the discharge which is known as gleet. This point may also permit slight leakage of urine, causing further inflammation and additional lymph deposit.

From what precedes, I desire to show that stricture of the urethra is merely a deposit of scar tissue, that it forms exactly as similar tissue forms elsewhere, and that it should be treated on the general principles applicable to the treatment of cicatricial deposits in general.

Symptoms. The earliest and most constant symptom of stricture is a slight mucopurulent discharge observed at the meatus on rising in the morning. As the case becomes more pronounced, the discharge may be present between each act of urination. It varies in amount in accordance with local and general conditions, but is always slight. There is apt to be an uneasiness, which in some cases amounts to smarting or burning during urination, and even perhaps at other times. The size and character of the stream become altered in time, and there may be undue frequency of urination. The symptoms are all very mild in the early stages, but become more and more pronounced as time goes on.

Diagnosis. None of the symptoms mentioned are pathognomonic, and while they would properly excite a suspicion of the presence of stricture, the diagnosis can be established only by a careful instrumental exploration of the urethral canal. For this purpose, we use the *bougie à boule,* urethrometer, or the steel conical bougie. For the accurate determination of the exact location, and size of a stricture, I prefer the *bougie à boule,* or bulbous bougie, with a flexible shaft.

The normal, moderately dilated adult urethra has a circumference of about thirty to thirty-two millimeters. Bearing in mind the fact that the urethral caliber is not uniform throughout, when we examine for stricture it is well to use a bulb somewhat smaller, say twenty-six or twenty-eight. The bulb should develop one of three important facts: *First,* it may pass the entire length of the canal without meeting any obstruction, and thus demonstrate the absence of stricture. *Second,* in the presence of obstruction, the bulb will be arrested; if this should occur, continuous gentle pressure should be made on the shaft, which would gradually overcome a spasmodic obstruction. If the instrument does not pass further, the shaft should be grasped between the thumb and index finger and withdrawn, taking the measurements from the bulb to the point at which the shaft was held in order to locate the depth of the cicatrix. *Third,* in the early stages of stricture formation, before contraction has become prominent, as the bulb passes over the affected area the patient will experience more pain than at other points.

In beginning this examination I always ask the patient to notify me when any point of special tenderness is reached, and I usually hear from him about the time the examining hand detects the obstruction. The objection to using the conical bougie is that in the early soft strictures it succeeds in stretching them sufficiently to pass without much difficulty, and hence fails to give the desired information at a time when treatment would be most successful.

Prophylactic Treatment. Realizing that a urethritis is frequently followed by stricture, every case of gonorrhea demands careful treatment, not only on account of the present discomfort and dangers, but also because of the probability of a subsequent stricture. Efforts should be made to reduce the inflammation by mild measures, and to secure final healing of any obstinate areas. When a gonorrhea lasts several weeks there is either infection of some of the follicles, or an ulceration remaining from a very high grade of inflammation. Protracted discharge calls for careful examination. The endoscope may render valuable service in the diagnosis and treatment in such cases. Unhealed areas may also be detected by the pain caused by the passage of the *bougie à boule.*

Treatment. The problem in the treatment of urethral stricture, therefore, is the removal by stretching and absorption of the deposit of fibrous tissue. The secondary results, chronic catarrh, ulceration, etc., will disappear spontaneously if the former is accomplished. On the exterior of the body, similar deposits would be treated by massage, passive movements, etc. This principle can be applied to strictures only by the introduction of instruments to dilate the contracted part of the canal; and, just as skillful massage is the most effective means of treating external fibrous deposits, so is proper dilatation the most efficient means of treating strictures. This can not be stated too forcibly. It should be an invariable rule never to cut a stricture if it can be dilated. It is a matter of universal clinical experience that traumatic strictures do not, as a rule, respond to dilatation. These must, therefore, be cut. Let it be understood, however, that cutting never cures a stricture; in fact, it adds a fresh trauma and additional cicatricial tissue which would result speedily in a greater contraction than before, unless careful and systematic after treatment is followed out.

Congenital stenosis of the meatus, and strictures of this region, if small enough to interfere with treatment, must be cut; they never yield to dilatation.

Strictures of the pendulous urethra, if recent and soft, may yield to dilatation, and this method of treatment should always be given a fair trial, but if old and fibrous, will usually require cutting. Otis's dilating urethrotome has been the most satisfactory instrument for this purpose, in my hands. One may cut to the desired caliber with much precision. Do not do more than is necessary. Cut a little, introduce the bulb, and if the obstruction is not relieved, cut again. Albarran recommends four slight incisions at different points in the circumference.

Strictures of the pendulous urethra possess an astonishing tendency to recontraction, so that the greatest perseverence is required after operation to maintain the proper caliber.

Strictures from the penoscrotal angle to the bulbomembranous junction, unless traumatic, if passable, never need cutting.

If it is possible to pass a whalebone filiform it will almost invariably be found that by gentle persistent efforts dilatation may be carried to the normal caliber. In the cases that will admit a filiform only, the instrument should be securely tied and allowed to remain in. This results in twenty-four hours in sufficient dilatation to permit of the introduction of a second or even a third filiform. These are in like manner retained, and in the course of one or two days all but one may be removed, and a Gouley tunneled catheter may be passed over this and allowed to remain, the filiform being withdrawn. After a few days a sufficient dilatation may be obtained to begin the gradual dilatation by steel bougies; or if not, a larger Gouley may be introduced. During all this time the patient must be given urinary antiseptics, and irrigation of the urethral canal should be practiced.

As soon as a caliber of fifteen or thereabouts has been reached, gradual dilatation may be begun in the usual way. The frequency of the treatment and the size of the instrument to be used depend upon the conditions present. Sufficient time should be allowed between each treatment to permit the reaction caused by the stretching to fully subside. If the stricture is soft and yielding, the instrument may be rapidly increased in size. On the other hand, if the deposit is very fibrous and resistant, the same numbers may properly be used at two or three successive treatments. It is very undesirable to increase the numbers too rapidly, as this results in laceration with the formation of new deposit and adds to the probability of contraction in the future. For this reason, I disapprove of the rapid dilatation, or divulsing, as it is called. While this method appears to yield brilliant results at the time, it is not entirely free from danger, and my experience has been that such patients are much more apt to return in future years for a recurrence of the stricture than those who have undergone the gradual method of treatment over a longer period.

A patient who has been treated for stricture must be impressed with the fact that it may return in spite of the very best treatment, and hence he should visit his physician from time to time for an examination, or for the introduction of a bougie, in order to detect the earliest stages of any recurrence. If this is not done, the condition may become so pronounced as to require a prolonged and systematic treatment, as in the first case.

THE NEED OF HONEST DRUGS.

BY JOSEPH D. BRYANT, M. D.,
New York City.

(Excerpt from the President's Address, A. M. A., Atlantic City, June 4, 1907.)

It is written that Oliver Cromwell, while fording a river with his army to attack the enemy, exclaimed, "Put your trust in God, but mind to keep your powder dry!" No less determined than Cromwell was, do many physicians now feel on account of the fact that their figurative powder (drugs) is quite apt to be worse than wet, being alarmingly defective in quality and fickle in strength. As an illustration of these facts, no evidence more convincing can be presented than that of the Health Department of New York City. This efficient department has for some time labored with discreet energy and with astounding results in this heretofore comparatively untilled field of interrogative scrutiny. That the crude drugs and standard preparations approved by the United States Pharmacopeia and prepared and exploited by reputable pharmacists should, in all instances, be found trustworthy admits of no denial.

It appears, however, from the reports of the Board of Health of New York City, on the analytic findings incident to the examination of crude drugs, tinctures, fluid extracts, etc., as compared with corresponding standards adopted in the United States Pharmacopeia, that reputable pharmacists have, because of commercial indifference, or studied intention, not infrequently contributed to therapeutic misfortune through the quality and strength of their drugs.

It is a matter of general knowledge that aconite is a drug of potent nature and in comparatively common use. Of this drug five of the thirteen samples analyzed were of the tincture and fluid extract of the root. Of the three specimens of the tincture one had 9 per cent. more, and of the remaining two 6 and 20 per cent., respectively, less of aconitin in than the standard requires. The two samples of extract of the root had 13½ and 25½, respectively, more aconitin in than is required. The remaining six samples were of the powdered root which in no instance was sufficiently abnormal to call for admonition. The samples of belladonna showed, respectively, from 35 to 45 per cent. less of mydriatic alkaloids in the powdered extract of the leaves, 11½ per cent. less in the fluid extract of the root, 17 per cent. more in the tincture of the leaves and 47½ per cent. in the fluid extract of the leaves than is required by the United States Pharmacopeia. Powdered nux vomica was found to be comparatively worthless, but in the tincture and fluid extract was revealed an excess of strychnin above the required standard of 19 and 17 per cent., respectively. In the tincture of opium was found, of morphin 7 to 13 per cent. more than the accepted standard of composition.

In 1/100 grain tablet triturate of nitroglycerin was discovered only 1/1600 of a grain of the drug. It is said that this preparation of nitroglycerin was known by the manufacturers to be unreliable and, therefore, should not have been exploited at all or in a guarded manner. It is not difficult to foresee how the failing to secure proper response from the use of these or other tablets of uncertain strength that the substitution therefor of a fresh solution of the drug might result unfortunately, especially if the dose of the fresh preparation were of the same amount as was that of the tablet last given. I have in mind an instance of this kind in which the use of a fresh solution of strychnin caused a fatal result.

It further appears that of the first sixty-one samples of drugs examined by the health department, all of which "articles are of exceptional importance, most of them potent poisons, and all are represented by definite chemical standards in the Pharmacopeia," only about 28 per cent. of the whole number was considered good and 16 per cent. was so bad as to justify legal action. It is proper to say that the majority of the manufacturers, recognizing the awkward position in which they were placed, with a spirit of yielding opposition, complied with the reformatory demands of the health department.

Nor is the aforegoing distress the only torment in pharmacy with which the medical profession has to contend. The idealized, savory products of pharmacy with which the market is cloyed are often quite as fickle in their nature and virtues as was a certain ancient queen of the Nile. Discreditable business thrift, supplemented by coöperative professional contentment and convenient indifference, patronized by confiding and credulous people, yields princely returns for the diminutive cash and equivocal integrity invested in it.

Not all of those, however, engaged in the pharmacal trade are unworthy of the trust and confidence given to men in other avenues of business. Very many, indeed, thus engaged are as sincere and trustworthy in their business affairs as are the best of those in other undertakings. Therefore, the old and revered principle of common justice, while emphasizing the fact that every person should be regarded as being honest until the contrary is proven, should be kept in mind and action. Consequently, in our conduct of matters imbued with professional or business virtues, the resolution should be to estimate uprightness of character by the tenets of common justice, and not by preconceived notions hostile to the principles of established equity. Purposes thus graciously fortified command respect, and gain in strength because of opposition. The reverse, however, will beget distrustful thought and may finally cause defeat. In this recital I can not overcome the belief that we ourselves contribute a major share to the inception and success of many medicinal ventures by our indifference or ignorance relating to savory prescribing and also by our thoughtless employment of proprietary medicines. Here, too, is a chance for medical teachers to instill proper notions regarding consistent ethical and therapeutic refinements.

When John Dryden wrote, "virtue is her own reward," he expressed a sentiment in keeping with the self-sacrificing spirit characteristic of the members of the Council on Pharmacy and Chemistry of the American Medical Association. I am creditably informed that these gentlemen are serving the profession and the people in this labor without the expectation of vulgar reward or the anticipation of special favor. I desire to commend their motives, approve of their work, and bespeak on the part of the profession an earnest support of all wise conclusions. Those who labor in a just cause without stipend are deserving of great praise; those, however, who serve for pay can only expect approbation.

COUNCIL ON PHARMACY AND CHEMISTRY.

The great work being done by this council is attracting the attention of the whole medical profession. When the work of the committee was inaugurated, many appeared to believe the object of this committee to be to build up some special manufacturers of pharmaceuticals at the expense of others, but we feel sure that such an idea has entirely disappeared. The open dealing of this committee with every preparation put on the market, the bold stand against frauds and deception of all kinds, has forced the respect of all interested in honest methods.

Nothing that is intended to reach the respectable portion of the medical profession attempts to avoid the inspection and examination of that council. The work done has been presented from time to time in the pages of *The Journal of the A. M. A.* We feel that it should have the hearty support not only of this House of Delegates, but also of every member of the association and of every honest practitioner of medicine, and that things condemned by this committee should form no part of the armamentarium medicum of any respectable physician or surgeon. Some of the chemical work of the council will soon be undertaken in our own laboratory in the association building. This matter has been delayed by the congested condition of the building resulting from the preparation and printing of the Directory.—*Secretary Simmons' Report, A. M. A., Atlantic City.*

The Council on Pharmacy and Chemistry is doing a work of unexampled importance for the men who are now engaged in the practice of medicine. The proprietary medicine habit of physicians has been in its way even more scandalous than the "patent-medicine" habit of the public at large, because we are at least, supposed to know better. The work of the Council on Pharmacy and Chemistry should be encouraged by every means in our power. We should not only expose the fraudulent character of the claims of the proprietary people, but we should also encourage the honest firms which are making scientific preparations of known composition.—*Recommend of Dr. William J. Mayo, Retiring President's Address, A. M. A., Atlantic City.*

We most earnestly commend the work of the Council on Pharmacy and Chemistry and the president's views thereon, and we commend to the Board of Trustees the further and permanent continuance of this work. We most strongly recommend that the members of this association confine their prescriptions to articles contained in the United States Pharmacopeia, the National Formulary, or such as have been approved by the Council on Pharmacy and Chemistry.—*Action taken by the House of Delegates, A. M. A., Atlantic City.*

The Pennsylvania Medical Journal.
PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

CYRUS LEE STEVENS, M. D., Editor and Publisher.

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BEAVER—Boyd B. Snodgrass, M. D., Rochester.
BEDFORD—Walter F. Enfield, M. D., Bedford.
BERKS—S. Banks Taylor, M. D., Reading.
BLAIR—Frank A. Ford, M. D., Altoona.
BRADFORD—C. M. Woodburn, M. D., Towanda.
BUCKS—A. F. Myers, M. D., Blooming Glen.
BUTLER—Robert S. Lowry, M. D., Butler.
CAMBRIA—Harry J. Cartin, M. D., Johnstown.
CARBON—J. B. Tweedle, M. D., Weatherly.
CENTER—J. Y. Dale, M. D., Lemont.
CHESTER—H. Y. Pennell, M. D., East Downingtown.
CLARION—R. A. Walker, M. D., West Monterey.
CLEARFIELD—Charles E. McGirk, M. D., Philipsburg
CLINTON—R. B. Watson, M. D., Lock Haven.
COLUMBIA—Luther B. Kline, M. D., Catawissa.
CRAWFORD—C. C. Laffer, M. D., Meadville.
CUMBERLAND—H. H. Langsdorf, M. D., Carlisle.
DAUPHIN—Charles M. Rickert, M. D., Harrisburg
DELAWARE—Ellen E. Brown, M. D., Chester.
ELK—J. C. McAllister, M. D., Ridgway.
ERIE—George W. Schlindwein, M. D., Erie.
FAYETTE—Owen R. Altman, M. D., Unioutown.
FRANKLIN—John J. Coffman, M. D., Scotland.
FULTON—George M. Robinson, M. D., McConnellsburg.
GREENE—James C. Knox, M. D., Waynesburg.
HUNTINGDON—H. C. Froutz, M. D., Huntingdon.
INDIANA—H. B. Buterbaugh, M. D., Indiana.
JEFFERSON—Harry B. King, M. D., Reynoldsville.
LACKAWANNA—William E. Keller, M. D., Scranton.
LANCASTER—P. P. Breneman, M. D., Lancaster.
LAWRENCE—B. E. Sankey, M. D., New Castle.
LEBANON—Ezra Grumbine, M. D., Mt. Zion.
LEHIGH—H. Herbert Herbst, M. D., Allentown.
LUZERNE—James W. Geist, M. D., Wilkes-Barre.
LYCOMING—William E. Delauey, M. D., Slate Run.
McKEAN—James Johnston, M. D., Bradford.
MERCER—Charles I. Walker, M. D., Sharon.
MIFFLIN—Walter H. Parcels, M. D., Lewistown.
MONROE—N. C. Miller, M. D., Stroudsburg.
MONTGOMERY—Edgar S. Buyers, M. D., Norristown
MONTOUR—Cameron Shultz, M. D., Danville.
NORTHAMPTON—Samuel S. Apple, M. D., Easton.
NORTHUMBERLAND—H. W. Gass, M. D., Suubury.
PERRY—L. M. Shumaker, M. D., Elliottsburg.
PHILADELPHIA—R. Max Goepp, M. D., Philadelphia.
POTTER—E. H. Ashcraft, M. D., Coudersport.
SCHUYLKILL—George O. O. Santee, M. D., Cressona.
SNYDER—A. J. Hermann, M. D., Middleburg.
SOMERSET—H. C. McKinley, M. D., Meyersdale.
SUSQUEHANNA—C. C. Halsey, M. D., Moutrose.
TIOGA—A. H. Glover, M. D., Knoxville.
UNION—Oliver W. H. Glover, M. D., Laurelton.
VENANGO—E. W. Moore, M. D., Franklin.
WARREN—Mary C. Conant, M. D., Warren.
WASHINGTON—J. B. Donaldson, M. D., Canonsburg.
WAYNE—Louis B. Nielsen, M. D., Honesdale.
WESTMORELAND—Myers W. Horner, M D., Mt. Pleasant.
WYOMING—George M. Kinner, M. D., Mehoopany.
YORK—G. E. Holtzapple, M. D., York.

All communications should be addressed to the PENNSYLVANIA MEDICAL JOURNAL, Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

ATHENS, JULY, 1907.

THE NONSURGICAL TREATMENT OF APPENDICITIS.

The writer has in mind several patients whom he treated years ago for well marked appendicitis, who are now in good health, never having had a second attack; others who had a second attack but have since been well for periods of time varying from a few to twenty years. In contrast to these cases he recalls numerous patients who were not so fortunate. A girl of fourteen had what was undoubtedly a light attack of appendicitis occurring during her menstrual period. This was diagnosed as ovarian pain due to exposure from a heavy rain while going to school. She was told to rest in bed for a few days and a second call was not made. Two years later she had gangrenous appendicitis. At the operation a drainage tube was necessary and the time lost was three times what would have been necessary with an interval operation, not to mention the increased risk to life and health. A man of forty, living in the country, was seen one night suffering with a mild case of appendicitis. A second call was not made and two years later operation was necessary for suppurative appendicitis, the appendix being way up under the lower lobe of the liver. Both abdominal and lumbar drainage was necessary and four months was required for recovery. While waiting for a street car a friend told the writer that he had had two light attacks of appendicitis and asked whether he should submit to an operation. The question was considered as being rather more social than professional and the answer was given that as he lived close by a good hospital it would be safe to wait until another attack and then go immediately to the hospital. Within six months he had gangrenous appendicitis; there was hesitation about operation at first by the physician and later by the wife, and in less than three days, the wife of the prosperous young business man was an unconsolable widow. The JOURNAL has just received the following letter:—

> Buffalo, N. Y., July 1, 1907.
>
> *Dear Doctor*:—I am sending you, under another cover, a copy of the May number of the South-Western Medical Gazette, containing an article entitled "The Nonsurgical Treatment of Appendicitis," by W. T. Marrs, M. D. I know but little of Dr. Marrs or the Gazette, but believing the nonsurgical treatment of this disease a matter of great importance especially to country practitioners, I think Dr. Marrs' article is very opportune, and that by a discussion of it in the medical press and by leading and broadminded medical men, much light would be thrown upon this subject, and many dangerous operations avoided and lives saved. I should be pleased to read any comment you may choose to make in your Journal.

Dr. Marrs says, "When we come to look over our record of cases and figure up statistics on the subject, we find that fully as many cases recover without operation as with it." This is true in some localities, but it should be remembered that many of the deaths after operation should be charged to the "without operation" class rather than to the operative class, since the operation is delayed until the condition has become such that there is little prospect of recovery either with or without operation. Seldom does one die from the operation *per se*. Opening the abdomen and inserting a drainage tube is a perfectly safe procedure.

Again Dr. Marrs says, "And when we consider the number of people on whom it is impossible to operate, we will realize the importance of nonsurgical treatment." This is very true, and we are inclined to think that a large majority of primary cases of appendicitis will recover without operation if properly treated. A certain proportion of these patients will, however, have subsequent attacks, and each relapse is likely to be more severe. This editorial would not have been written were it not for the letter quoted above, a letter which, by the way, was neatly printed and probably given general circulation.

In addition to emptying the bowels, keeping the patient quiet, and restricting the diet, Dr. Marrs used locally in all of his cases a popular proprietary ointment, which he thinks contains "several vegetable sedatives and depressants," One wonders whether the owners of the ointment had anything to do with the letter from Buffalo.

Patients suffering from appendicitis need to be individualized, so to speak, the same as those suffering from any other disease, medical or surgical. The primary case that is recognized early, the patient kept quiet in bed and the bowels (after first being emptied gently by a small normal salt enema or by small doses of the mild chlorid) given physiological rest by withholding all food will usually so much improve that the question of operative interference at the time will be easily answered. Some of our best physicians disapprove of the giving of any laxative or purgative. If the fever is high or the pain severe the ice bag should be used locally. Other local applications do little more than satisfy the mind of patient and friends. Any local application that irritates the skin increases the danger of infection should operation become necessary. Opiates and antipyretics should seldom, if ever, be used, as either tends to mask the symptoms so as to mislead the physician watching the case. It is often better for both the physician and the patient if a skilled surgeon can be called in consultation early, even where operation is not indicated. If operation is imperative, the sooner it is performed the better. If not clearly indicated, it is better to wait for an interval operation, and some would wait until the appearance of the second attack. Good authorities, medical as well as surgical, advise early operation in every case as soon as diagnosed. S.

A STATE HOSPITAL FOR INEBRIATES IN MINNESOTA.

While the Inebriate Hospital Bill presented to the legislature of this state by the committee of the state medical society appointed for the purpose failed to be enacted into a law, a similar measure in Minnesota met with success in the 1907 session of the legislature. The bill as enacted is described by the *St. Paul Medical Journal* of June, 1907, in these words:—

> The bill provides for the purchase of 640 acres of land by the board of control, and for the erection of suitable buildings thereon which will be under the control of the medical superintendent. To this farm colony may be committed any person suffering from chronic inebriety, whether caused by the use of alcohol, morphin or other drugs, for an indeterminate period, limited only by parole before two years have elapsed. Commitment is made on complaint of any person and after examination by a jury composed of a judge of probate and two others, one at least of whom shall be a physician. The parole system provides that a patient may be released after sixty days, if in the judgment of the superintendent such release is wise, and that the patient must thereafter report once each month to the judge of probate and furnish proof that he is living a sober life. The bill also provides for the right of appeal from commitment, and for the voluntary application by patients for the benefits of the hospital treatment. The working out of this plan is left to the board of control, and two per cent. of the liquor license fees received by the cities and towns of the state is set aside to provide the funds for the construction, and maintenance of the hospital.

It will thus be seen that this law is similar to those now on the statute books of Iowa and Massachusetts.

The bill introduced in the Pennsylvania legislature appears to have failed because of lack of interest. No one appeared as opposed to it. Many legislators favored it; and a few worked hard for it, among them Hon. Webster Grim and Hon. A. B. Hitchcock who introduced the bill in the Senate and House respectively. The only argument made against the bill was that of lack of funds; and had there been enough enthusiasm for the bill this argument would have been overcome. The fact that the measure was a new one was also against it.

Certainly the measure did not fail because of lack of work on the part of the Inebriate Hospital Committee of the state society, for this committee worked hard for it. It is to be hoped that this effort shall not be in vain; and that it may make possible the passage of a similar bill by the next legislature.

The committee was greatly aided by Dr. Charles E. Woodbury, superintendent of the Massachusetts Inebriate Hospital, who appeared before the Senate Appropriation Committee and told in modest and convincing manner of the excellent work done by the institution of which he is head, and by the Hon. Henry F. Walton, ex-speaker of the House, who strongly advocated the bill, appeared before the Senate Appropriation Committee in its behalf and greatly aided the Inebriate Hospital Committee by his counsel and advice. D.

SIXTEENTH CENSORIAL DISTRICT MEETING.

A meeting of the physicians of the Sixteenth Censorial District, Bradford, Sullivan, Susquehanna and Wyoming Counties, was held in Sayre, Tuesday, June 25, with fifty physicians in attendance. The forenoon was spent visiting the Lehigh Valley R. R. shops, at the Robert Packer hospital, and in social conversation. A meeting of the censors, presidents and secretaries was called to order at eleven o'clock by Dr. S. Birdsall, censor from Susquehanna county. It was decided to hold a meeting next year, the time and place to be selected by the censors of the district acting with Dr. W. F. Randall of Sullivan county, that county having no society.

Dinner was served at the Wilbur House and was followed by cigars. Dr. C. J. Cummings, Sayre, acted as toastmaster, and the toasts were responded to as follows: "The Medical Profession and the Laity," by Rev. H. L. Hanna, Sayre; "The Ideal District Meeting," by Dr. C. L. Stevens, Athens; "Our Neighbors from New York State," by Dr. W. E. Johnson, Waverly, N. Y.; "The Ordinances and By-Laws of Our State Society," by Dr. George D. Nutt, Williamsport, councilor for the Sixth Councilor District.

The physicians then adjourned to the parlors and the scientific part of the meeting was opened with prayer by Rev. Mr. Hanna. Dr. S. Birdsall presided, making a few appropriate remarks on the motto found on the program, "More Light."

The following program proved an interesting one as the papers were all excellent and the discussion general, though somewhat limited for want of time.

"The Recent Epidemic of Typhoid Fever in Scranton, with Special Reference to Treatment," by Dr. L. M. Gates, Scranton; discussion opened by Dr. J. G. Wilson, Montrose.

"Autointoxication, and Its Relations to Surgical Work," by Dr. J. E. Walker, Hornell, N. Y.; discussion opened by Dr. William F. Randall, Dushore.

"Intestinal Anastomosis, by the Connell Stitch Method," by Dr. C. E. Thomson, Scranton; discussion opened by Dr. J. E. Walker, Hornell, N. Y.

"Extrauterine Pregnancy. Report of a Case," by Dr. F. A. Goodwin, Susquehanna; discussion opened by Dr. S. M. Woodburn, Towanda.

"Present Problems in the Evolution of the Medical Profession," by Dr. George D. Nutt, Williamsport; discussion opened by Dr. C. M. Pratt, Towanda.

"Some Mistakes I Have Made," by Dr. George H. B. Terry, Wyalusing; discussion opened by Dr. H. L. McKown, Tunkhannock.

The whole meeting was considered a success. The attendance would have been even larger were it not that the train service was such that many physicians in the district would need to be away from home over night. The train on the Williamsport and North Branch road was late in reaching Towanda, and Drs. George D. Nutt, Williamsport, G. F. Bell, Newberry, and W. F. Harshberger, New Albany, failing to secure a special, or official permission to ride on a freight, made the seventeen mile ride on top of a box car and appeared in the dining room a little late. S.

THE READING SESSION.

The Mansion House will be considered headquarters during the Reading Session. Below is given a list of hotels with rates per day.

Mansion House, American plan	$3.00
Hotel Penn, American plan	3.00
American House, American plan	2.50
Hotel Brighter, American plan	2.50
Merchants House, American plan	2.50
United States Hotel, American plan	2.50
Highland House, American plan	2.50
Woodvale Inn, American plan	2.50
Aldine Private Boarding House, American plan	2.00
Winsor Hotel, European plan	1.00
Folgers (with café), European plan	$ .75 to 1.00
Crystal Palace, European plan	$ .75 to 1.00

The Highland House is a summer resort, situated on Neversink Mountain, 15 minutes' ride from Ninth and Penn Streets; cars every half hour.

Woodvale Inn is on the north slope of Neversink mountain, 15 minutes' ride from Ninth and Penn Streets; cars every half hour.

A number of cafés and restaurants are located near the place of meeting where meals will be served on the European plan.

Members in securing rooms will please communicate direct with hotels; if not satisfactory, refer the same to Dr. John F. Feick, chairman of Committee on Hotels.

All meetings and exhibits will be held in Rajah Temple, one and a half squares from the large hotels and the same distance from the Franklin Street station on the Reading Railway.

The chairmen of the different committees are as follows:—

Finance, Dr. George W. Kehl; Exhibits, Dr. S. Banks Taylor; Printing, Dr. William S. Bertolet; Hall, Dr. Irvin H. Hartman; Hotels, Dr. John F. Feick; Entertainment, Dr. Daniel Longaker; Registration, Dr. William W. Livingood.

Fremont W. Frankhauser,
Chairman, Committee on Arrangements.

RAILROAD RATES FOR THE READING SESSION.

The Trunk Line Association has furnished card orders for use of our members and friends who wish to attend the meeting in September. The cards read: "Ticket agents of lines in Pennsylvania will sell to bearer one excursion ticket to Reading and return at the reduced fare authorized for the above meeting. Tickets to be sold September 21 to 26, good to return leaving Reading to September 28, 1907, inclusive. No excursion ticket to be sold for less than 25 cents."

The rate authorized will in some cases be more than two cents a mile. In Philadelphia and at some other points the same rate can be secured for a six-day excursion ticket without any card order. Members will do well to consult their local ticket agents early and then use a mileage book, a local excursion ticket or send for a card order as will best suit their convenience. The railroads just now appear to take pleasure in charging a little more than formerly for special tickets and excursions, probably to show their appreciation of recent legislation soon to go into force. S.

THE INTERSTATE MEDICAL JOURNAL.

The *Interstate Medical Journal* announces the purchase of the *St. Louis Courier of Medicine*, one of the oldest medical journals in the West, and its consolidation with the *Interstate* on July 1st.

This merger removes from the field an old and highly esteemed contemporary, and its consolidation with the *Interstate* adds strength and prestige to that periodical. This is the fourth medical journal that has been purchased and absorbed by the *Interstate*, during the past few years. S.

ARE YOUR MEDICINES RELIABLE?

Special attention is directed to the selections printed on pages seven hundred ninety-one and two, the one headed The Need of Honest Drugs and the other Council on Pharmacy and Chemistry. S.

State News Items.

MARRIED.

Dr. Collin Foulkrod and Miss Gertrude Allen, in Philadelphia, June 13.

Dr. Edward Lyon and Miss Florence Walton Slate, in Williamsport, June 10.

Dr. Arthur M. Heilman and Miss Alice C. Patterson, both of Butler, June 18.

Dr. Thomas Appleton Cope and Miss Carrie E. Perkins, in Germantown, June 2.

Dr. Robert E. L. McCormick and Miss Mary Shrum, both of Irwin, June 12.

Dr. Edwin T. Robinson of Philadelphia and Miss Florence Evey, in Bala, June 10.

Dr. Frederick Fraley and Miss Mary Lapsley Pyle, both of Philadelphia, June 26.

Dr. Philip Abrahamson and Miss Hettie Edith Gillis, both of Philadelphia, June 18.

Dr. Alonzo H. Stewart of Philadelphia and Miss Ethel J. Sexton, in Williamsport, June 5.

Dr. William West MacFarland of Pittsburg and Miss Rosa Minear of Athens, Ohio, June 12.

DIED.

Dr. Merrill J. Galloway (Univ. of Pennsylvania, '94) in Philadelphia, June 4, aged 35.

Dr. Julia A. H. Walker (Woman's Med. Coll., '80) in Harrisburg, recently, aged 64.

Dr. Charles J. Schulze, (Univ. Greifswald, '46) in Reading, June 16, from heart disease, aged 89.

Dr. George A. Knight (Long Island College Hospital, Brooklyn, '67) in Salem, June 2, aged 69.

Dr. Albert J. Givens (Cleveland Med. Coll., '81) in Millvale, June 14, from pulmonary trouble, aged 49.

Dr. James P. Hepburn (Jefferson Med. Coll., '86) formerly of Jersey Shore, in Tuscon, Ariz., May 26, after a long illness, aged 43.

Dr. John W. S. Norris (Jefferson Med. Coll., '59), formerly of Philadelphia, but of late years a resident of Paris, in Paris, May 31, from rheumatic arthritis, aged 69.

Dr. Charles Daniel Christman (Coll. of Physicians and Surgeons, Baltimore, '86) of Wiconisco, in a hospital in Philadelphia, June 8, after an operation for cholelithiasis, aged 50.

ITEMS.

The Antispitting Ordinance of Pittsburg is being enforced.

Dr. A. Parker Hitchens of Glenolden, sailed for Europe on June 22.

A Cambria County Insane Hospital will be erected on a 600-acre lot given by Mr. Andrew Carnegie.

Dr. William H. Knipe, Limerick, jumped from his carriage, while his team was running, and fractured a leg.

Sixty-two cases of typhoid were reported in Philadelphia during the week ending July 5, five more than for the previous week.

Dr. Morgan J. Williams, Scranton, sustained an automobile injury, June 11, necessitating the amputation of the right leg above the ankle.

Dr. William R. Nicholson has been elected Professor of Gynecology in the Philadelphia Polyclinic in place of Dr. H. A. Slocum, resigned.

Drs. J. R. Durham, Warren; D. H. Ludlow, Easton; and J. F. Raine, Sykesville, are taking a postgraduate course at the Philadelphia Polyclinic.

Child Labor. According to the report of Inspector Delaney there were 40,371 children employed in Pennsylvania during 1906, with sixty fatal accidents.

A portrait of the late Dr. John H. Packard is to be painted for the managers, the visiting staff, and the ex-residents of the Pennsylvania Hospital, and it will be hung on the wall of that institution.

Bureau of Vital Statistics Report for 1906 shows that 10,632 persons died in the state during the year from tuberculosis, 4039 from typhoid fever, 2484 from diphtheria, 1683 from whooping cough, 1583 from measles, 525 from scarlet fever, and 85 from malarial fever. There were 1901 deaths of children under two years of age from bowel troubles during the hot months.

The Pennsylvania Society for the Prevention of Tuberculosis has engaged Mr. Wallace Hatch of Washington, D. C., for its executive secretary. The society is entering upon an active campaign, will open an office near the center of Philadelphia and will endeavor to coöperate in the most helpful manner with all existing institutions. In this way it is hoped to develop the work conservatively and permanently.

GRADUATES, PENNSYLVANIA MEDICAL COLLEGES, 1907.

COLLEGE	Number of Graduates.	Graduates from Penn.	Date of Commencement.
Jeff. Med. Coll.	126	60	June 3.
Univ. of Penn.	114	70	June 19.
Medico-Chi.	75	69	May 31.
Hahnemann	48	34	May 24.
West. Penn.	44	29	June 7.
Woman's Med. Coll.	29	15	May 22.
Temple College.	5	3	June 1.
Totals	441	280	

Societies.

NORTHWESTERN PENNSYLVANIA MEDICAL ASSOCIATION.

The Fifth annual meeting of the Northwestern Pennsylvania Medical Association was held at Cambridge Springs, June 25 and 26, with representatives from Venango, McKean, Crawford, Erie and Warren Counties present, and Dr. M. S. Guth of Warren presiding.

The afternoon was devoted to business. Election of officers resulted as follows: President, Dr. James Johnston, Bradford; Vice-presidents, Drs. George A. Reed, Erie; J. B. Siggins, Oil City; W. C. Brittain, Cochranton; secretary, Dr. M. V. Ball, Warren; assistant secretary, Dr. Thomas Elliot, Sharon; treasurer, Dr. C. W. Schmehl, Warren.

At the evening session Dr. Edward Stieren of Pittsburg read a paper "Sympathetic Ophthalmia," illustrating the same with numerous specimens. He urged the early enucleation of blind eyes when signs of irritation are present.

Dr. Harvey R. Gaylord of Buffalo, of the State Cancer Laboratory, gave an address on "The Present Status of the Cancer Question." He explained the results obtained in experiments on animals and argued for the infectious nature of the cancer material. He showed how rats, living in cages wherein cancerous animals had lived, developed malignant growths with great frequency. He also described the experiments with immune blood and told of the possibilities in treatment that this held out.

After the meeting a social hour was passed.

The morning session on Wednesday opened promptly at 9 o'clock, and Dr. Roland O. Meisenbach of Buffalo gave an interesting talk on "Rheumatism and Allied Affections." He spoke particularly about the treatment of flat foot and operations about the joints and explained a new classification of joint troubles. His paper was illustrated by a great number of *x*-ray negatives and plaster casts. The suggestions as to cause and the line of treatment were very valuable and elicited much discussion.

Dr. Eugene Smith of Buffalo read an important paper on "Pyloric Obstruction and Gastric Surgery." He advised against operation for acute gastric ulcer with no history of previous bleeding. He argued that, under internal treatment and rest, such cases are more often relieved than by operation. For the chronic kind with history of repeated attacks, operation is necessary. He reported a successful operation on a young child in a case of intussusception. His paper was freely discussed.

The new president was conducted to the chair; in a few remarks he outlined the plans for the next meeting. He asked for the coöperation of each one present and, at his suggestion, Hotel Rider, Cambridge Springs, was made the permanent place of meeting. Other county societies and individuals in near-by states will be invited to coöperate.

About fifty physicians were registered and twenty ladies were present.

M. V. Ball, Secretary.

Communication.

UROTROPIN SHOULD BE DISSOLVED.

New York, June 24, 1907.

To the Editor: In your current issue we read a paper by Dr. John G. Beardsley, reporting three cases of hematuria after the use of urotropin in small doses.

Our experience has been, in investigating cases of this nature, that the trouble was caused by the fact that the drug was taken in dry form, instead of being dissolved in simple or carbonated water in the proportion of seven and one half grains per half pint. Used in this dilution, by-effects from urotopin practically never occur. The temperature of the water should not be above 80° F. The urotropin tablets contain no excipient, but, being firmly compressed, take a few minutes to disintegrate. When the tablets are reduced to a powder, they dissolve at once.

Dr. Beardsley's paper does not state whether or not urotropin was given dissolved.

In view of the importance of this point, we trust you will give space to the above in the columns of your esteemed Journal.

Schering and Glatz.

Reviews.

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., M. A., F.R.S. (Edin.), Professor of Physiology at the University and Bellevue Hospital Medical College, New York. Octavo of 326 pages. Illustrated. Price, $2.50, net. W. B. Saunders Company, Philadelphia.

This is a comprehensive work on an important but not particularly interesting subject. Taken as a whole, the work is an eminently scientific one, treating the subject in a manner, however, that will not appeal to the average physician.

To those wishing a work giving the latest theories and laboratory results in the subject of metabolism we can unreservedly recommend this volume. C. R. P.

THE COMMON BACTERIAL INFECTIONS OF THE DIGESTIVE TRACT, and the Intoxicatons Arising from Them. By C. A. Herter, M. D., Professor of Pharmacology and Therapeutics in Columbia University, Consulting Physician to the City Hospital, N. Y. Cloth, 360 pages. The Macmillan Company, New York, 1907. Price $1.50.

The author states that he has "laid considerable stress on methods developed in my laboratory with a view to obtaining a better insight into the bacterial conditions of the digestive tract than has been hitherto possible. This I have done in the belief that when these methods are utilized in practice they will prove of real service in gaining a truer conception of the nature of the bacterial processes that are operative in disease."

Aside from the scientific classification of the flora of the digestive tract in health and disease at different stages and as influenced by foods and medicines, and a description of the methods of determining the same, there is much in the book that is both popular and practical. The author quotes Ficker to show the influence of exhaustion and of hunger upon the passage of bacteria through the mucous membrane, and in support of the view that excessive exertion increases the predisposition to infection, especially of typhoid fever. This same influence is thought to afford an explanation why the flesh of animals killed after being driven a long distance decomposes more quickly than when the animals are allowed rest and refreshment before being killed. S.

SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY. By Walter Porter Manton, M. D., Professor of Clinical Gynecology and Professor Adjunct of Obstetrics in the Detroit College of Medicine, etc. Third edition. Illustrated. 12mo, 136 pages. Price $1.25, net. F. A. Davis Company, Philadelphia.

This little syllabus furnishes an excellent outline of the principal facts in human embryology.

It is admirably illustrated and the subject is most interestingly handled, considering the innate difficulty in making such a subject attractive from the reader's standpoint.

A glossary of some of the words and terms used in embryology deserves especial commendation. C. R. P.

Transactions of the Allegheny County Medical Society.

BLOOD PRESSURE STUDIES IN TYPHOID FEVER.

BY JOSEPH H. BARACH, M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, March 19, 1907.)

The work to be reported this evening was carried on at the South Side Hospital in the service of Dr. William H. Mercur and myself in the months of March, April, and May, 1906. During that service we had eighty-one cases of typhoid fever in which blood pressure records were made. The cases were of the ordinary type, or perhaps more severe than usual, first, on account of the number of cases which were complicated by pneumonia (being in a season of the year in which pneumonia is common), and, secondly, owing to such complications as occur in wards that are overcrowded and insufficiently ventilated, there being then three times as many cases of typhoid in the city as is considered its normal number, hence the overcrowded hospital wards.

In this series of eighty-one cases there were ten of pneumonia, five of hemorrhage, and one of perforation. Including those patients who died within the first few days in the hospital, our mortality was eleven per cent.; so that we had typical cases to deal with and our findings represent those which occur in the classical typhoid.

The instrument used for the determination of the blood pressure was the Stanton sphygmomanometer with its armlet eight centimeters wide. We have found this in preference to others a most simple and useful instrument, and at present it fully deserves to be taken as the standard of its class. The determinations were made by special nurses who had been given careful instructions as to the correct method of taking the blood pressure, and we may say that taking of the systolic pressure is almost as simple as the counting of the pulse. They were made at intervals of six hours, *i. e.* four times daily. The times of the day were 8 A. M. and 2 P. M., 8 P. M. and 2 A. M. Our reasons for choosing those hours were that at 8 A. M. and 2 P. M. a patient is ordinarily at his best. At about 8 P. M. the temperature is highest and at about 2 A. M. the patient's vitality is considered lowest.

Of the various forms of blood pressure charts considered, we believed the Janeway chart the best, and adopted it for our records.

Why did we study the blood pressure in this disease and what questions did we hope to solve? There were many questions, and as to how successful and how unsuccessful we were, shall be seen.

Considering how important a part the cardiovascular system plays in this disease, that, in fact, it bears much of the very brunt of the disease, the possibilities of a clearer understanding of its pathological physiology, of the diagnosis, of the prognosis and of the treatment, therefore, seemed many.

As the temperature, pulse and general condition of the patient vary with almost each week of the disease, so did we expect the blood pressure might vary, and, therefore, in summing up our findings, we divided them into the various weeks of the disease. The first week of the blood pressure records represents the first week of the fastigium of the disease and so on, because our patients, as a rule, enter the hospital at about the tenth day of their illness. In recording the pressure for each week we give the figures at which level the pressure was maintained during that week, thus eliminating the extremes which are nearly always due to some accident, some temporary occurrence.

Our cases varied in patients of the male sex from the ages of eleven to forty-three years; in the female, from eleven to thirty-two.

It is only to be expected that the blood pressure varies with the different ages and the sexes; so we give in table form the blood pressure as it occurs in the disease at the ages of eleven to twenty-one, twenty-one to thirty, and thirty to forty-three in the male, from eleven to twenty-one and twenty-one to thirty-two in the female. We also give tables of the total male and female average, showing that there is a distinct difference between them.

But before considering numerically what the relative abnormal is, let us consider first, what constitutes the relatively normal blood pressure. To represent the normal with this instrument I personally made five examinations in individuals of normal health, at the ages of eleven to twenty-one, twenty-one to thirty, and thirty to forty in the male, eleven to twenty-one, and twenty-one to thirty-three in the female. The results are as shown in Table A. To make this as nearly normal as possible, I picked individuals whose age, weight and height were within limit of the recognized normal standard. (Table B.)

Table A.
NORMAL AVERAGE.

MALE.		FEMALE.	
Age.	Pressure.	Age.	Pressure.
11-21	89.2	11-21	96.0
21-30	110.8	21-30	103.6
30-43	118.0	30-33	104 6

Table B.
STANDARD WEIGHT.

Feet.	Inches.	Pounds.	Feet	Inches	Pounds.
5	0	115	5	7	150
5	1	120	5	8	155
5	2	125	5	9	160
5	3	130	5	10	165
5	4	135	5	11	170
5	5	140	6	1	180
5	6	145			

In summing up and averaging all the cases, we find that the average is considerably higher in the male than in the female, and that in both sexes, in this disease, the pressure falls, stays down and rises again as convalescence is established. This is shown in Tables C and D. In graphic form, although only in a very general way, the blood pressure curve is inverse to the temperature curve. (Chart I., Ida Tromber chart.)

Tables C and D.
TOTAL AVERAGES.

	1st Wk.	2d Wk.	3d Wk.	4th Wk.	5th Wk.	6th Wk.
Male.	93-72	92.8-69	87-68	83 64.3	85-69.2	90.6-69.3
Fem.	87.2-68.1	87-70	85-70	85·68	82.7-66	89-72

In summing up and averaging the cases of males according to their age, *i. e.* from eleven to twenty-one, twenty-one to thirty and thirty-one to forty-three, we find that the pressure is higher as age advances. This is shown in Table E for the male and Table F for the female sex. Comparing this with Table A, we see the difference between the blood pressure in typhoid fever and in health.

Tables E and F.
AVERAGE ACCORDING TO AGE.

MALE. NO. OF CASES, 60.				FEMALE. NO. OF CASES, 21.		
Ages. 11-21	21-30	31-43		Ages. 11-21	21-24	24-30
88.7-75	91-70	100-74	1st Wk.	88-70	85-63	
88.1-71.8	95.3-67.2	96.2-69	2d Wk.	86.5-70	90-71	
84 2-62.8	89-66.5	91.8-70	3d Wk.	85-66.6	86-68	
76-58	83-64 6	88 3-70	4th Wk.	83-65	85-73	
80 60	82-70	80-65	5th Wk.	80-64	85-71	
	84-67	90-60	6th Wk.	82.5-65	90-75	

What is the cause of this? Why is it that in typhoid fever the blood pressure is lower than normal? This condition of lowered blood pressure must be brought about by effect upon (a) the heart force, (b) the vascular resistance, or (c) the amount of fluid in the vessels, these being the factors which maintain blood pressure.

Amount of Fluid in the Vessels. Such conditions as polyuria or profuse diarrhea may cause a great loss of fluid from the body but in this disease these are by far exceptional. We have observed that the blood pressure is no higher in patients that drink plenty of water than in those that do not take sufficient amounts, and from this we are led to believe that the amount of fluid in the vessels does not influence the blood pressure. In a disease like cholera, in which the loss of fluid is great, and if the vascular system did not accommodate to the lessened amount of liquid, low blood pressure would likely follow, but in typhoid fever this does not exist.

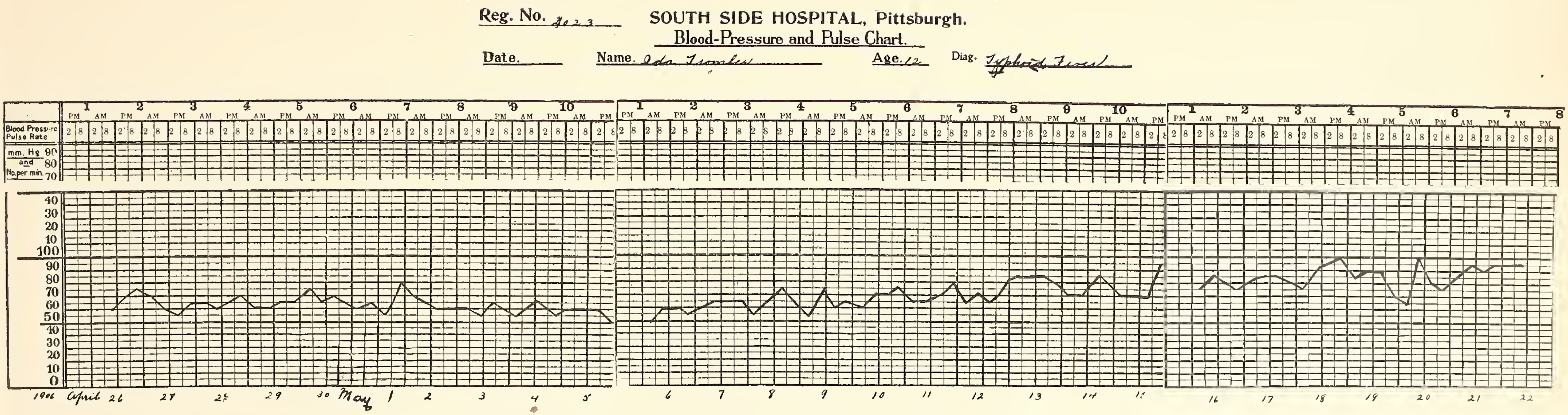
Lowered Vascular Resistance. This (the second factor) undoubtedly plays the most important part. We have evidence in the anatomical changes frequently found, that the muscle fibers and elastic tissues of the blood vessels may be in such a state as to cause lowered vascular force and resiliency.

As functional manifestations we have such common occurrences as hypostatic congestion which is evidence of the highest order of lowered vascular tone.

As said before, we have observed that even in those cases in which the vessels contain a large amount of fluid, the pressure is no higher than in others, showing that there exists a low vascular tone and lessened peripheral resistance. All these facts point to how much of the low pressure is due to lowered vascular resistance.

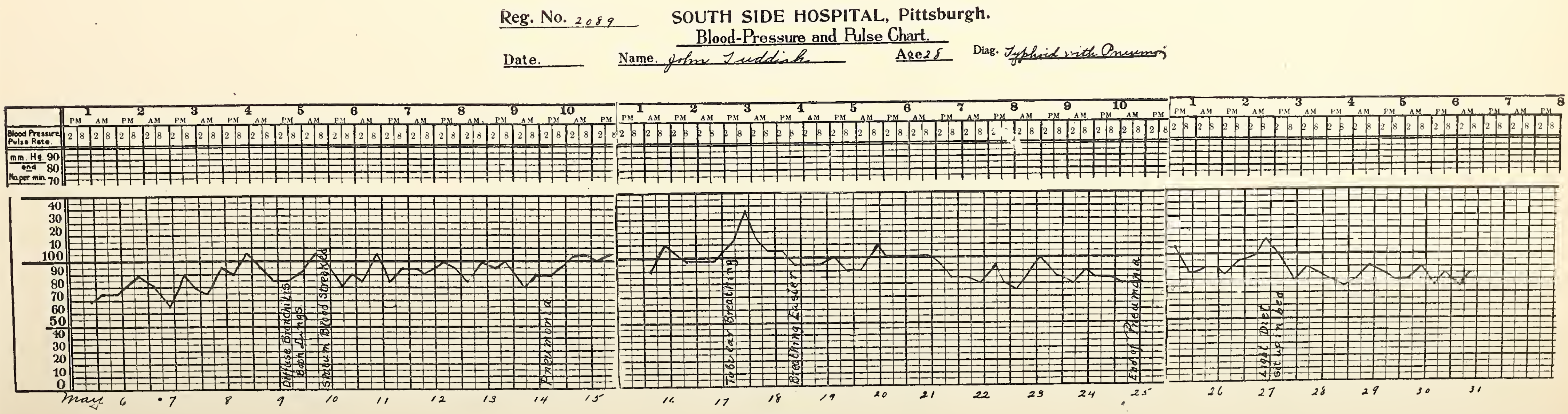
Diminished Heart Force. This factor is closely associated with the lessened vascular resistance. Reasoning, however, that the low blood pressure comes early in the disease, long before heart weakness manifests itself in any way, it would seem that its part in the low pressure would be in the latter stages of the disease; although it could be the cause of low pressure from the beginning, in what we consider the extremely toxic cases and in patients whose hearts have been weakened by former disease.

This, then, is the manner in which low blood pressure is brought about. But what is the cause? This is a question we do not attempt to answer any more than to say that the cause is either in the action of the



Reg. No. 2023 SOUTH SIDE HOSPITAL, Pittsburgh.
Blood-Pressure and Pulse Chart.
Date. Name. Ida Tromley Age. 12 Diag. Typhoid Fever

CHART I.



Reg. No. 2089 SOUTH SIDE HOSPITAL, Pittsburgh.
Blood-Pressure and Pulse Chart.
Date. Name. John Tuddish Age 28 Diag. Typhoid with Pneumonia

CHART II.

typhoid poison or the rest in bed and restricted diet, or the combined effect of both.

So much for the cause. What are its effects? How does it show itself? With the falling of the blood pressure there naturally comes gravitation of blood from the surface to the interior of the body to the larger vessels. With this gravitation of blood from the surface, from the extremities of the body, there comes the chilliness, the dizziness and other manifestations of the beginning of the disease which may be accounted for not only by the actually lowered blood pressure, but by the disturbance from the former level. And, even though the pressure is lower after the patient has been in bed for several days, that these symptoms have disappeared, is because the circulation, so to speak, has gained its equilibrium.

There are many effects of the low blood pressure in this disease, too numerous to consider here.

In this work we have taken up the systolic pressure alone, our reason being that with our present instruments, which are not too delicate and can be readily carried in the wards from patient to patient, there is not one that can be relied upon for the diastolic pressure in the hands of any one but an expert,—even then considerable personal equation exists as to the results obtained; and, while the systolic pressure represents only part of the pressure cycle, yet the result obtained by its study is of sufficient significance to make it of the greatest clinical value.

We have thus far considered the relation of blood pressure to the general course of the disease. Let us now consider what relation it bears toward the various conditions, the accidents, complications, and the reaction of blood pressure to therapeutic measures.

Relation of Pressure and Temperature. It might at first seem that patients with high temperature would have low pressure but this is not sustained. In looking over our tables in which we have recorded side by side, the temperature, pulse and pressure, we find that there is no constancy of relation between the two in any way. A high temperature is not regularly accompanied by high or low pressure; nor is a sudden rise or fall in temperature usually accompanied by like behavior of the blood pressure.

Relation of Pressure and Pulse Rate. In uncomplicated typhoid we find that these bear no constant relation to each other. We may find the pressure at the same level in one patient who has a pulse of 130 during the second week of the disease, and in another who has a pulse of 84. So far as pulse rate in relation to pressure is concerned, this asynchronism is really to be expected when we recall that the blood pressure and pulse rate are governed by distinctly different factors. Nor can we by radical palpation distinguish within moderate degrees a higher pressure from a lower one. We have tried on various occasions in typhoid patients to distinguish between two pulses as to which was of higher pressure, and we were often disappointed. In pneumonia and cerebrohemorrhage, in which the pressure may reach a very high point, the palpating finger can easily detect that the pressure is high, but in typhoid the only accurate means is the instrument.

Relapse. The behavior of blood pressure in the relapse of typhoid fever is variable. In ten cases of relapse, five showed no disturbance at all, the pressure keeping at about the same level until convalescence set in and then rising toward the normal. In four, the pressure began to ascend at what would have been the expected time for it to go up, had there been no relapse; but as the relapse developed the pressure fell again to about the level of the first infection, continuing thus until the true convalescence set in. In one case, which, however, may not have been a true relapse, the pressure

Reg. No. 2179 **SOUTH SIDE HOSPITAL, Pittsburgh.**

Blood-Pressure and Pulse Chart.

Date. 5/25/06 Name. Susan Succosh Age. Diag. Typhoid Fever

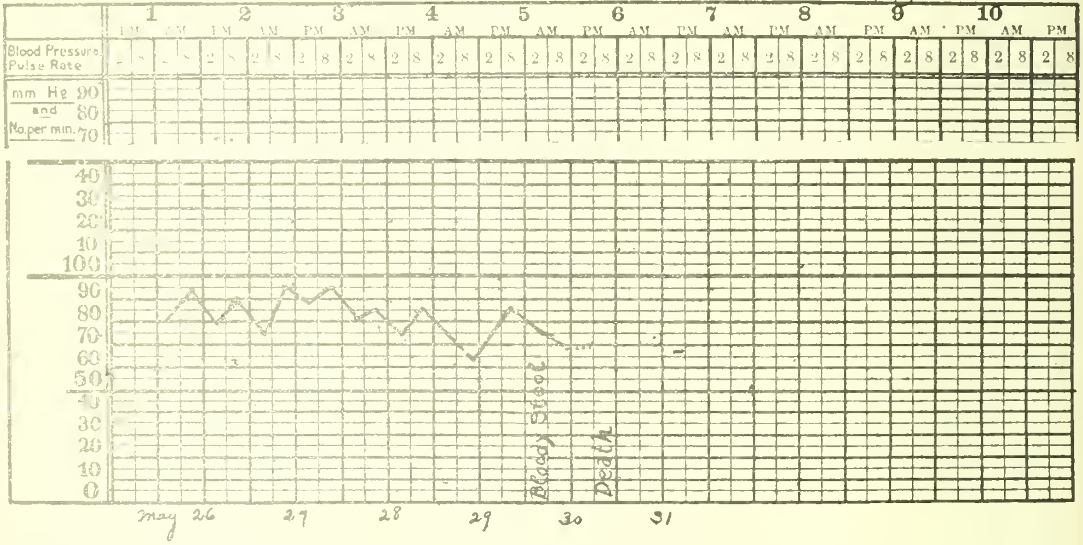


CHART III.

followed the temperature curve; it went up, stayed up and fell with the subsidence of the fever.

Pneumonia. (Chart II.) With pneumonia complicating typhoid, the pressure is higher during the activity of the pneumonia. In some of the patients the pressure distinctly rose with the onset of this complication, stayed up, and fell with the crisis or lysis.

Hemorrhage. (Chart III.) We had five cases of hemorrhage and in each of these there was a moderate fall in pressure. Four had a fall of twenty millimeters and one had a fall of thirty millimeters. Such falls in pressure, especially when gradual, really show nothing distinctive on the chart, as greater falls and elevations are seen which have no meaning whatever. Of these two patients, one died of perforation several days after the hemorrhage and the other died the day following the hemorrhage, having at the same time a lobar pneumonia. It would seem from our limited experience, that the fall in pressure is in proportion to the severity of the hemorrhage, and that a quick fall is more dangerous than a gradual descent.

Perforation. (Chart IV.) We had but one case of perforation, and I saw the patient within two hours of the time it must have occurred. The patient, after using the bedpan, before the nurse could come, took it from under him and stretching himself placed it on the lower shelf of the stand which stood by the head of his bed. It was while in that strained position that he was seized with the sudden pain which must have been the exact time of the perforation. He was operated on, the perforation found and closed, but he died on the following day. At 8 A. M., when the perforation occurred, the pressure was 80; at 2 P. M. it was 90; at 8 P. M. it was again 80; after operation at 8 A. M. it was 90; at 2 P. M. it was 75 and he died. This case, therefore, showed no effect whatever on the blood pressure.

Edema of the Larynx. (Chart V.) In the one case of this complication, as the edema progressed and as the asphyxia increased, the pressure steadily rose in twelve

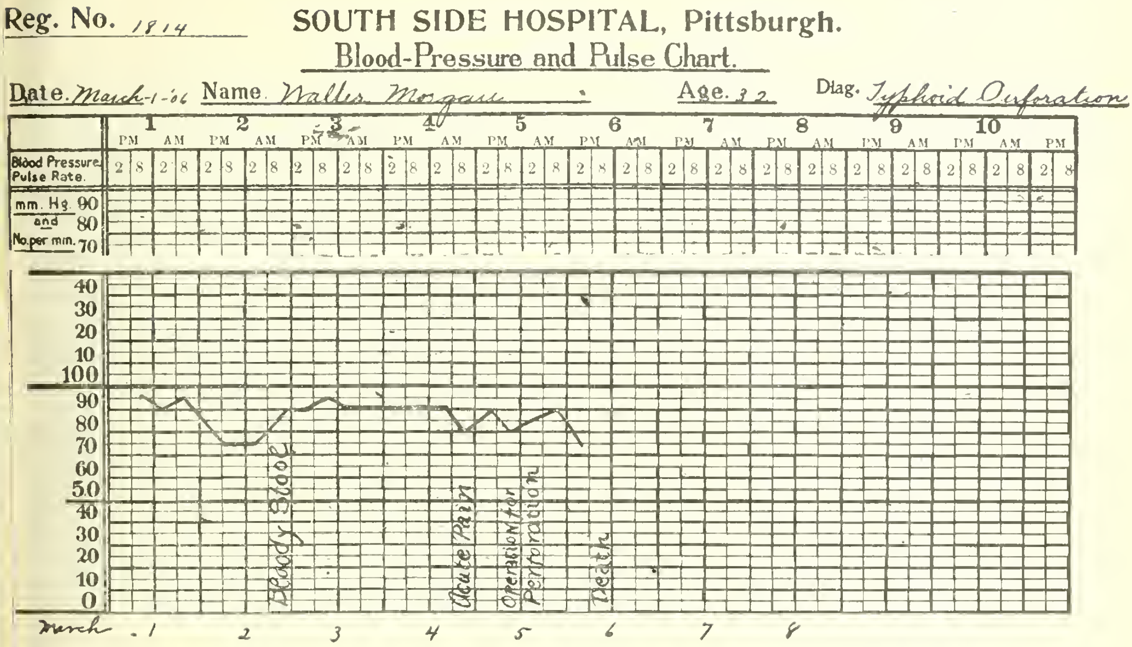


CHART IV.

hours from 95 to 125. Tracheotomy was performed as a life saving expedient, and with the relief of the asphyxia and dyspnea the pressure fell within the following twenty-four hours from 125 to 65.

Infection of the Gall Bladder (*Peritonitis*).(Chart VI.) This patient, a girl of eleven years, suffered an acute attack of pain in the region of the gall bladder on her third day in the hospital; her temperature at that time was ranging between 102 and 104 and showed no disturbance, but her pulse did rise from 120 to 128. The blood pressure, which had been running between 60 and 70, went up with the attack of pain to 110, and fell quickly as the acute pain subsided. She was restless and her abdomen was tender. Four days later she had another such attack and the pressure jumped, this time from 55 to 100; again without any marked change in temperature, her pulse went up from 116 to 124. During the following week the temperature reached normal, and there were no further disturbances. But at the end of the week abdominal symptoms were again prominent, the temperature began to ascend and continued so for the next six days when it reached 104, and she died. Unfortunately, we have no pressure record of the last week, as our service had ended, and the records were not continued.

We believe that with each attack of pain there was a leakage of pus and peritonitis, and at the time of her death the gall bladder ruptured and its contents were expelled into the peritoneal cavity, from which she died with symptoms of peritonitis.

Pain. (Chart VII.) One patient had a severe attack of abdominal pain of which we could not find the cause. Although this happened late in the disease, the resident diagnosed the condition as perforation. The pressure had risen from 75 to 110. When I reached the hospital to confirm the diagnosis, the pain had partly subsided, and other signs of perforation were not present. Nothing further developed in this case.

Psychic Effect. (Chart VIII.) This may cause a temporary rise in pressure; we had several demonstrations of this. In one case, as a result of having five visitors the

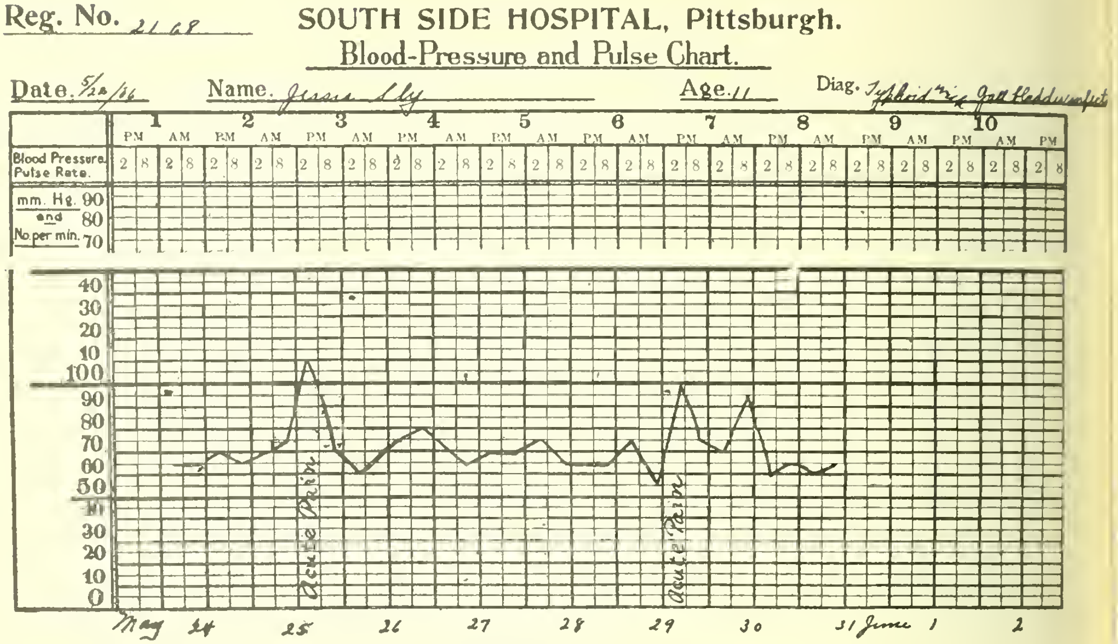


CHART VI.

patient's temperature rose from 98 to 104½, his pulse from 78 to 120, and the pressure from 55 to 80. All of this subsided within twelve hours.

Hydrotherapy. The cold sponge and the cold pack cause a rise in blood pressure in all the patients where their influence is for the good. In those cases in which the patients become blue and livid from the cold and the pressure does not rise, the reaction that should come after the bath does not come. Here the blood pressure record may be of value in indicating the use of the cold bath.

Raising the Foot of the Bed. We have taken the systolic pressure in a number of cases before and after the foot of the bed had been raised for periods of five minutes to twenty-four hours, and saw no change.

Rest in Bed and Light Feeding. (Chart IX.) We had occasion to observe the behavior of blood pressure in seven patients who had but minor ailments. These patients were put to bed, given a purgative and were kept on liquid diet for a time. In all but one of these did the pressure fall within the first three days, stayed down and rose toward the normal as the diet was increased and as they were allowed up and about. How much of this element, rest in bed and liquid diet, is responsible for the low blood pressure in typhoid, it is difficult to estimate.

Feeding. (Chart X.) During convalescence as the pressure is rising, seemingly because the disease is overcome, when the first soft diet is given there is a quick rise and fall, due undoubtedly to the mental stimulus that comes to the hungry typhoid patient, and as the diet is increased and convalescence goes on the pressure makes rapid strides towards its normal level.

Medication. The effect of the various drugs on the blood pressure in this disease we studied in but a limited number of cases, intending to take it up systematically and more extensively in the future.

Whisky given in one half ounce doses every third hour for three days had no effect on the level of the pressure, while in two of the cases the pulse became slower during the time that it was given.

Reg. No. 164 **SOUTH SIDE HOSPITAL, Pittsburgh.**

Blood-Pressure and Pulse Chart.

Date. 3-4 Name. Peter messini Age. 21 Diag. Typhoid with Laryng

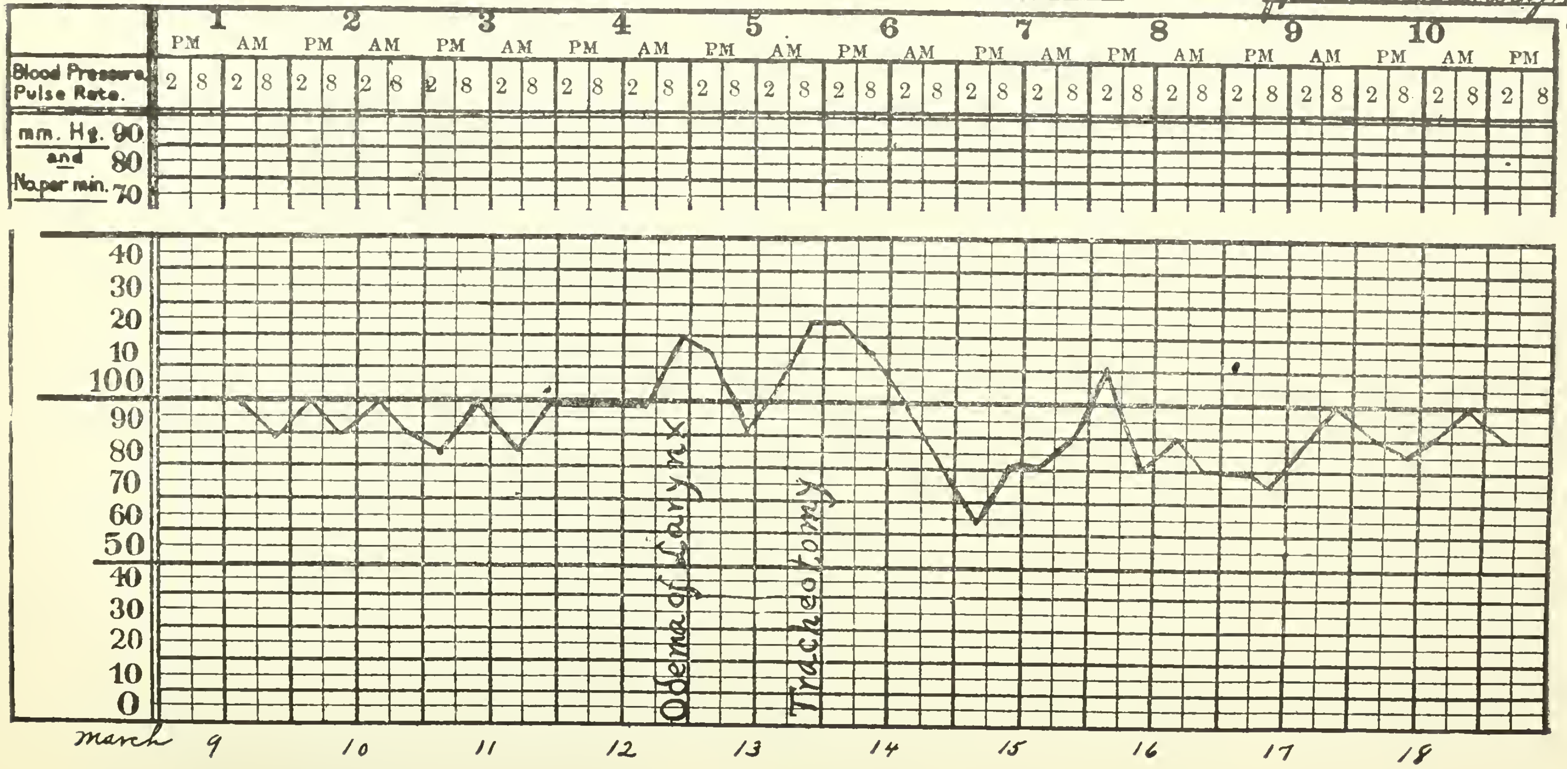
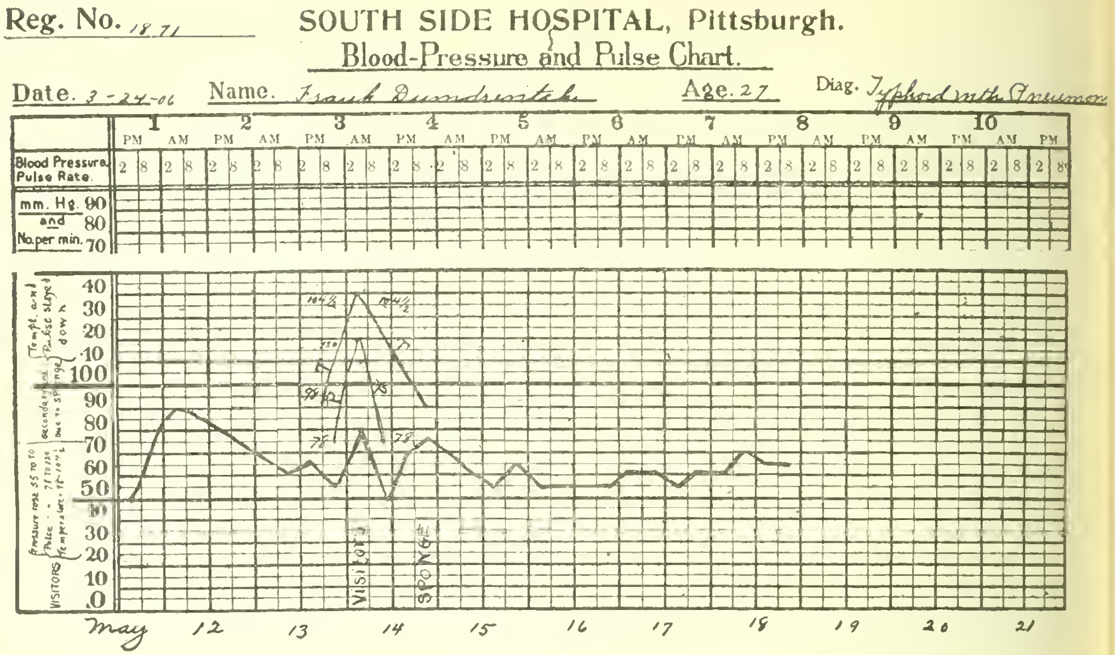


CHART V.



Reg. No. 1871

SOUTH SIDE HOSPITAL, Pittsburgh.
Blood-Pressure and Pulse Chart.

Date. 3-24-06 Name. Frank Dumdrewitch Age. 27 Diag. Typhoid with Pneumon

CHART VIII.

Strychnin sulphate, given in doses of one thirtieth grain every third hour for four days, seemed to regulate the blood pressure so that it was more even than before and after the drug was given, but it did not change the level, nor distinctly benefit the pulse.

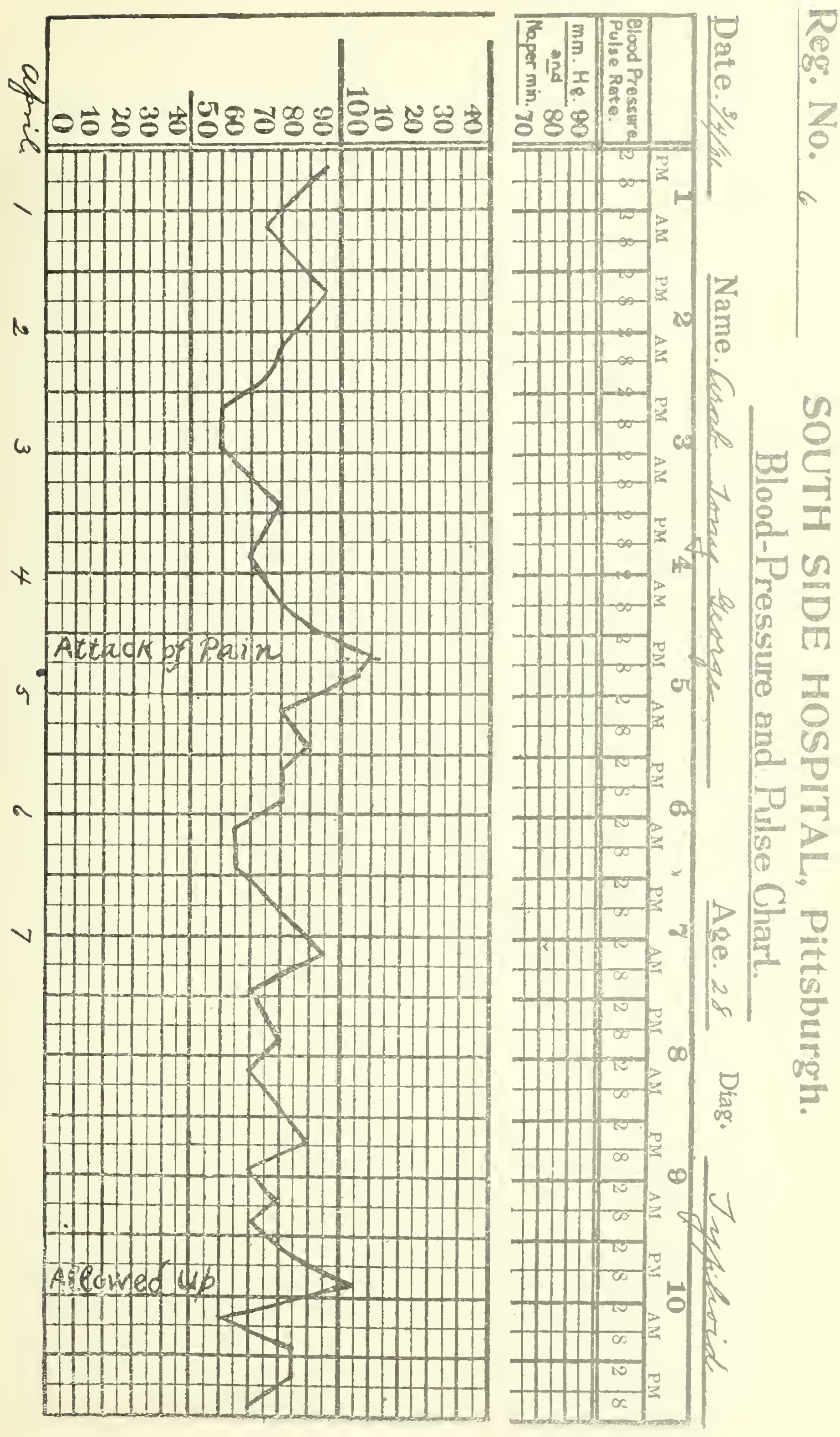
We gave infusion of digitalis in one half ounce doses every fourth hour to five patients for a period of four days each. In one case in which the temperature ranged between 100 and 99 there was some slowing of the pulse, but the pressure was not affected.

In another case, the patient was very wakeful while he was given the drug, but there was no effect upon the pressure. In the third case there was a slight rise in pressure, and in the remaining cases, no effect of any kind was noticed. It seems that, if digitalis had a power for good in this disease, it would have shown itself more markedly here. We feel positive about the preparation used, because we were giving it at the time to cardiac cases of lost compensation, with a most distinct raise in the pressure of each. (Chart XI.)

Nitroglycerin, a one hundredth grain every fourth hour for nine doses, caused a slight fall in several cases.

Value of Blood Pressure Studies in Diagnosis. As a diagnostic method of the disease itself, it has little value, because by the time that the pressure has gained its level, we will have already made the diagnosis by our other methods. As an aid to diagnosis of the complications of the disease it seems that it can be of value, especially in hemorrhage and peritonitis, but as to whether we are sufficiently dependent on this as a means of diagnosis, with our present experience, is to our minds doubtful.

Value of Blood Pressure Studies in Prognosis. As an aid in the prognosis of the disease we must say that we have observed nothing that will aid us on this difficult question. The rise and fall in pressure comes with the occurrences in the disease. Yet, there is a time when the blood pressure chart is of value in prognosis. We have record of ten cases in which at some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SOUTH SIDE HOSPITAL, Pittsburgh.
Blood-Pressure and Pulse Chart.
Date.
Name.
Age. 28
Diag. Typhoid
Blood Pressure Pulse Rate.
mm. Hg. and No. per min.
90 80 70
1 2 3 4 5 6 7 8 9 10
PM AM
2 8
40 30 20 10 100 90 80 70 60 50 40 30 20 10 0
April
1 2 3 4 5 6 7
Attack of Pain
Allowed up

CHART VII.

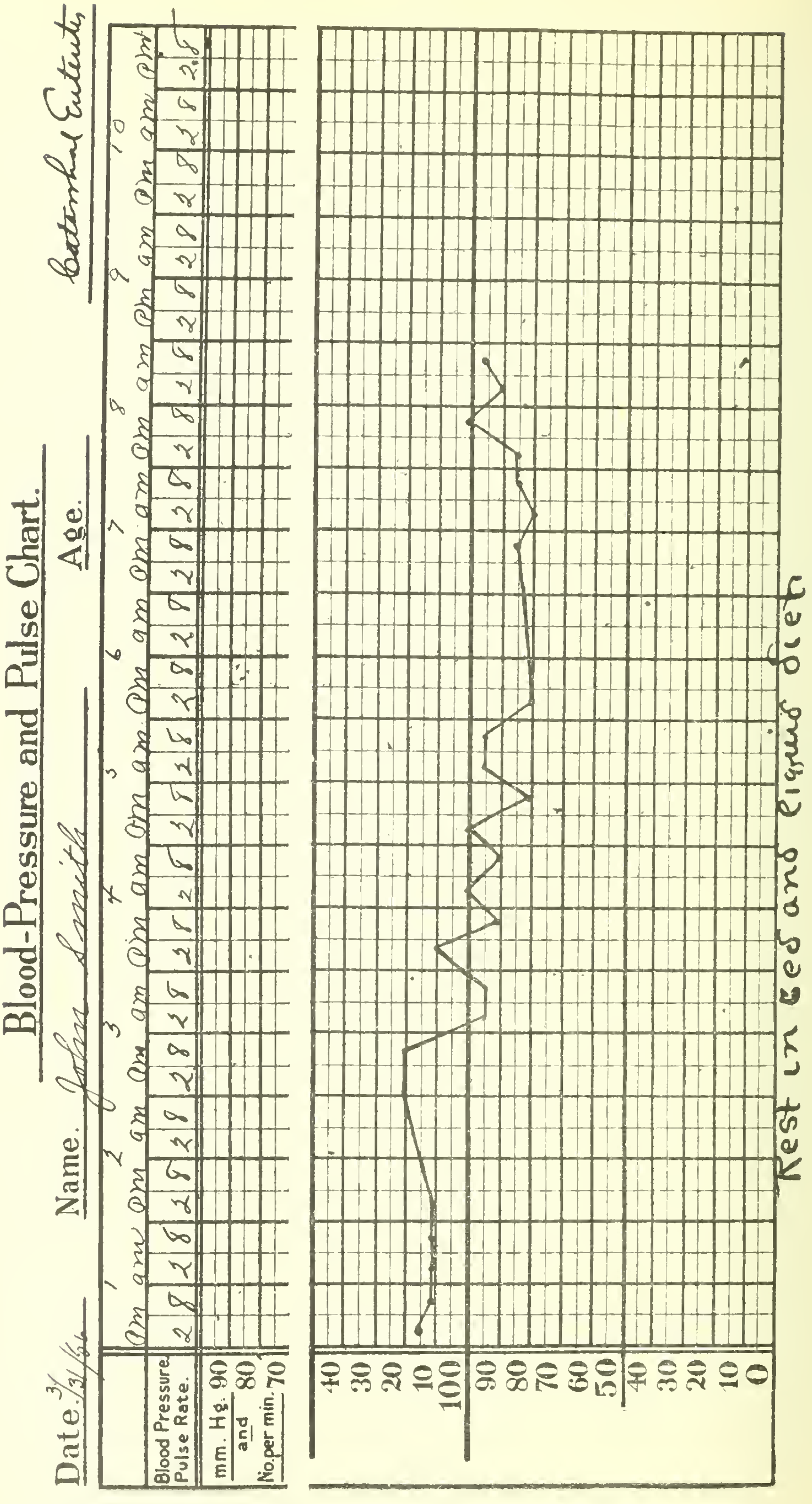
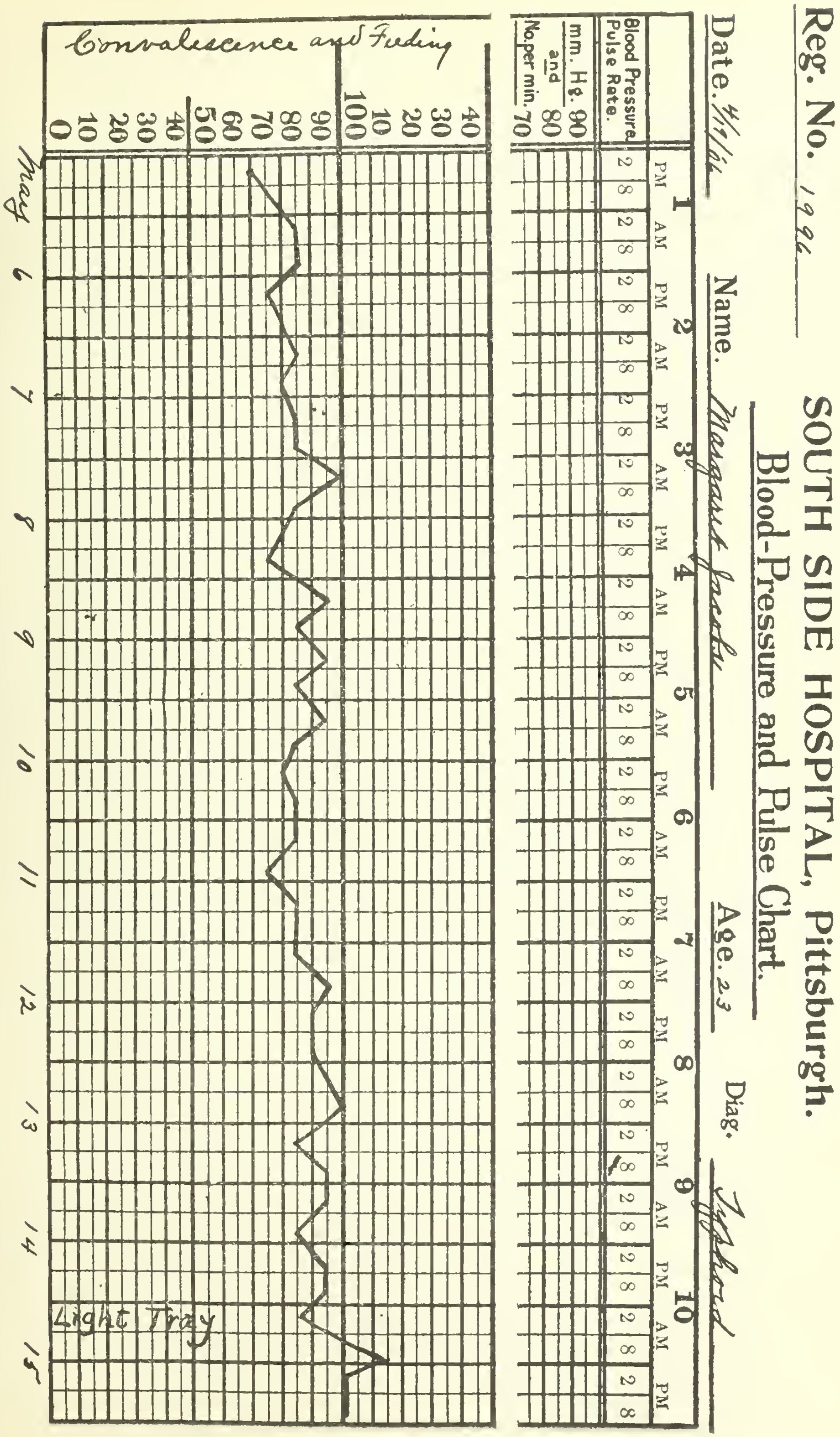

Blood-Pressure and Pulse Chart.
Date. 3/31/
Name. John Smith
Age.
Catarrhal Enteritis
Blood Pressure. Pulse Rate.
mm. Hg. 90 and 80 No. per min. 70
1 2 3 4 5 6 7 8 9 10
Pm am Pm am Pm am Pm am Pm am Pm am Pm am Pm am Pm am Pm am Pm
2 8
40 30 20 10 100 90 80 70 60 50 40 30 20 10 0
Rest in bed and liquid diet

CHART IX.



Reg. No. 1996

SOUTH SIDE HOSPITAL, Pittsburgh.

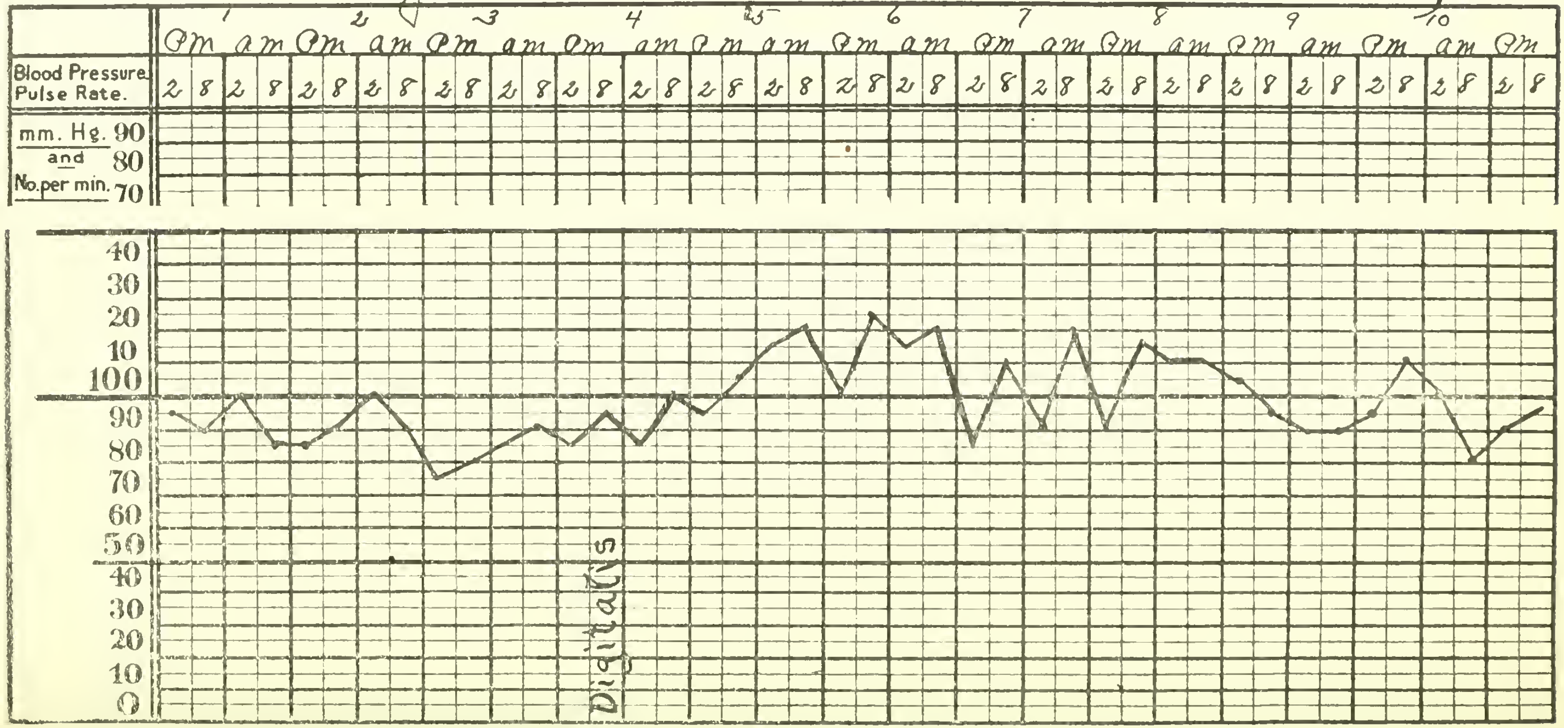
Blood-Pressure and Pulse Chart.

Date. 4/1/16 Name. Margaret Jacobs Age. 23 Diag. Typhoid

CHART X.

Blood-Pressure and Pulse Chart.

Date. 3-12 Name. Jos. Kinmiller Age. 62 Dilatation of Heart.



Effect from digitalis

CHART XI.

time during the course of the disease, the pulse, though it could be felt, could not be distinctly counted. In those cases of the ten in which the pressure fell progressively, the patient died. But in the others, in which the pressure did not fall to a marked degree, or in which, after having fallen, the pressure began to rise again, even though the pulse was not yet much improved, the patient recovered.

Value of the Blood Pressure Studies in Treatment. As to the value of our knowledge of the blood pressure toward the treatment of the disease we feel that the experience we have yet had with drugs aiming at the pressure does not warrant any opinions. It seems, however, that what we should desire is not drugs that will maintain the pressure at a higher level so much as drugs that will raise the pressure in an emergency. While we can not hope to have drugs that will impart power to the cardiovascular system, we very much need such drugs as will utilize to good advantage what power the heart and blood vessels do possess.

We believe that, with a more systematic and extensive study of drugs, we may be able to accomplish much toward treating arising conditions along well defined paths as scentific procedures.

From what has been said, let us consider of what value has been the study of blood pressure in typhoid fever.

1. It has shown us that the blood pressure falls from the normal after the patient has taken to bed, stays down until convalescence is established, and then returns toward the normal.

2. That typhoid fever is a disease with a blood pressure below 100 (accepting at present the Stanton instrument as a standard).

3. That the blood pressure is governed by factors of its own, and bears no constant relation to pulse rate or temperature.

4. That, in diagnosis, blood pressure studies may be of value in differentiating this disease from others after we know the behavior of other diseases in this respect. In the diagnosis of the complications it has a value.

5. That in prognosis the blood pressure chart is of value. A steadily falling pressure means grave danger; so long as the blood pressure keeps up at a reasonable level, we may feel that there is reserve power to work with.

6. That, in the treatment of the disease, study of blood pressure will probably be found of the greatest actual value. It may teach us that the way to combat circulatory failure in typhoid fever is to increase peripheral resistance; or, when to direct our efforts at the heart and when at the blood vessels, when it is well to increase and when it is well to diminish the amount of fluid in the vessels.

DISCUSSION.

Dr. C. C. Hersman said that we know the blood pressure in the developed male is higher than in the developed female. The female from eleven to twenty-one years is one or two years in advance of the development in the male between these ages which I think will account for the higher blood pressure reported.

There are at least two other causes for lower blood pressure in typhoid than just related, the general relaxed condition and the lessened amount of fluids in the body, due to the elevation of temperature. He asked the speaker to state whether he noticed any difference in the pressure during quiet and delirium. The reason he asked was that in his studies in puerperal insanity the pressure is normal during quiet but 165 to 170 or higher during the maniacal outbursts.

Dr. Barach replied that he has seen the blood pressure go up 40 mm. during an hysterical outbreak, but in the delirium of typhoid there is no marked change in the pressure.

When wet dressings are needed on hairy areas it should not be forgotten that they predispose the hair follicles to infection.—*American Journal of Surgery.*

SOME PATHOLOGY OF THE KIDNEY.*

BY E. W. WILLETTS, M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, May 21, 1907.)

This paper contains nothing new or original and I can offer no excuse for presenting it except that I have a number of rather typical specimens of the various conditions herein described to exhibit. It is from them rather than the contents of the paper that I hope you will get something of value.

I shall not speak of the pathology of Bright's disease and for want of time must leave out of consideration a number of interesting conditions.

Naturally, the subject of malformations is the first thing to discuss. Absence of one kidney is not uncommon, and occurs oftener on the left side and in the male sex. The ureter on the corresponding side is usually absent and there is present only one ureteral orifice in the bladder. Very rarely two ureters are present, that on the side from which the kidney is absent being blind at the upper extremity.

Congenital hypoplasia of one kidney, in which the rudimentary organ contains no glomeruli or tubules and is functionally useless, is far less common than entire absence. When only one kidney is present it undergoes a compensatory hypertrophy and may fully perform the function of excretion.

Absence of both kidneys has been reported but is very rare. The two kidneys may be united, forming the so-called horseshoe kidneys. Usually the organs are joined at the lower poles. The tissue connecting them may be fibrous, and the organs may occupy their normal positions. Very frequently the union is formed by renal parenchyma, and the kidney appears as one organ. Such a horseshoe kidney is associated with some displacement, oftenest downward. It may be in an iliac fossa or even in the pelvis. Rarely one pelvis is present and there may be only one ureter. As a rule there are two pelves with corresponding ureters, as in the specimen which I have here.

Congenital displacement of one kidney may occur and is usually of the left. The organ may lie on the sacrum or even deeper in the pelvis (so-called pelvic kidney). It may receive its artery from the lower part of the aorta or from the iliac. The distribution of the veins is extremely variable.

The most frequent change in form of the kidneys is the persistence of the fetal lobulations. The deep furrows sometimes seen may be taken for infarct scars.

Acquired displacement, movable or floating kidney, nephroptosis: By this is meant an abnormal, probably always acquired, mobility of the kidney. The condition is very common, and more frequent on the right side, usually occurring in women who have borne children or those with greatly relaxed abdominal walls. It is frequently associated with an enteroptosis. Wasting of the peritoneal fat tissue is said to produce the condition. The ureter of a freely movable kidney may become kinked or twisted and cause hydronephrosis, which is frequently intermittent.

Active hyperemia or congestion may be caused by dilatation of the renal arteries or by any condition causing increased aortic blood pressure.

Most typical specimens of acute hyperemic kidneys are found in the early stage of acute Bright's disease and in the acute fevers. The organs are large, soft, of dark red color and, on section, blood exudes from the surface. The urine is scanty and often contains albumin and tube casts.

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*Note. Specimens representing the various pathological conditions spoken of in the text were exhibited to the society and formed an extremely interesting group. (Reporter.)

Passive congestion is caused by obstruction to the outflow of blood from the kidneys. It may be a part of a general congestion as a result of insufficient heart action as it occurs in heart and lung diseases, especially when there is failure of compensation. It may be due to local causes, such as:

1. Compression of the veins due to increased intraäbdominal pressure during pregnancy or existence of large abdominal tumors.

2. Thrombosis of one or both renal veins or of the inferior vena cava above the point of entrance of the renal veins. Sudden occlusion of a renal vein may occur from thrombosis. The organ quickly becomes swollen and degenerative changes rapidly occur and may destroy the parenchyma. At autopsy I once found in place of the left kidney a large cyst (almost the size of an ordinary foot-ball), containing a bloody fluid. The walls of the cyst were made up of the kidney capsule and a very thin layer of greatly altered kidney parenchyma, and the renal vein was completely obstructed by a thrombus. The ureter which had a small lumen was partly obstructed by kinking. No other cause for the condition could be found.

When the thrombus develops slowly, collateral circulation may be established with the phrenic, lumbar and suprarenal veins, through small vessels which pass from the kidney into the capsule and empty into venules communicating with the veins named above.

Thrombosis is usually seen in children, being found sometimes in young infants dying of marasmus.

Chronic passive congestion persisting for a long period produces the condition called cyanotic induration. The kidney becomes swollen and hard, the capsule strips readily and on the surface the stellate veins are sometimes seen deeply injected. On section the cortex appears dark red in color and the glomeruli may stand out as dark red points.

The medulla is usually of a darker, more purplish color and the vessels may be visible as dark red stripes. The hardness of the organ is due partly to the distended condition of the veins and capillaries, and also to hyperplastic changes in the blood vessels, walls, and interstitial tissue.

The epithelium of the tubules undergoes degeneration and the glomeruli and tubules often contain blood cells and albumin. Hyaline casts may be present in the tubules. The urine is usually scanty and darker than normal, of high specific gravity, contains a small amount of albumin, hyaline casts and sometimes blood cells. An atrophic condition may develop, the kidney becoming small and very firm and the capsule adherent. This is called the contracted kidney of congestion. The cyanotic color serves to distinguish this from other forms of contracted kidney. Anemia may be due to local or general causes. When it is chronic as in chlorosis, pernicious anemia, carcinoma, etc., fatty degeneration of the cells of the tubules becomes a marked feature.

INFARCTS.

The renal arteries have no arterial anastomoses and when any of them is blocked by an embolus an infarct is formed. The left kidney is more frequently involved, probably because the left renal artery comes off from the abdominal aorta at less of a right angle than does the right. The emboli are usually particles of thrombi such as occur in heart disease, especially of the mitral valves.

That portion of the kidney from which the blood supply is cut off undergoes necrosis. The affected part undergoes degeneration in the course of a few hours and becomes pale yellowish-white in color, surrounded by a hyperemia and hemorrhage. Infarcts vary in size from that of a pea to very large areas. The tissue which undergoes necrosis, breaks down and is liquified and reabsorbed, while a new formation of connective tissue develops from the surrounding area. After a time this newly formed connective tissue becomes contracted and is seen on the surface of the organ as a depressed area known as an infarct scar. If many infarcts were present the kidney shows many of these depressed scars which give it the appearance of a contracted kidney. This is called the embolic contracted kidney.

Hemorrhagic infarcts are rare but may occur. They are usually very small.

A simple atrophy of the kidney occurs in the aged. Both organs are involved, becoming smaller in all dimensions and of reddish brown color.

Another form of atrophy is the arteriosclerotic kidney which is usually a part of general arteriosclerosis. The condition may develop so far that an organ very similar in appearance to the true contracted kidney results, and it is then known as the arteriosclerotic contracted kidney.

Purulent inflammation of the kidney: Two principal forms are recognized; (1) hematogenous or metastatic pus kidney, the entrance of the infection being through the arterial blood vessels; (2) the form caused by an ascending infection from the bladder, ureters or other part of the lower urinary tract.

The first form is usually associated with severe infectious diseases, septic endocarditis, pyemia from wound infection, puerperal infection, etc., and is most commonly caused by the pyogenic cocci. As a rule, both organs are involved with the formation of more or less numerous miliary, pinhead to pea-sized yellowish nodules which are seen chiefly in the cortex and are small abscesses.

Pyelonephritis is commoner than the metastatic form of purulent nephritis, is often unilateral, and the lesions are more marked. This form may be caused by stone in the kidney pelvis without a preexisting cystitis.

The bacteria which cause a cystitis, most commonly those of the colon group, reach the pelvis of the kidney through the ureter and finally enter the tubules. Necrosis and fatty degeneration of the tissue about the tubules which contain the bacteria, occur and are followed by purulent exudate from the neighboring blood vessels with abscess formation.

Cystitis due to stone is usually catarrhal but may become purulent by infection through the blood stream and the subsequent development of a pyelonephritis occurs in exactly the same way as when the infection is ascending from the bladder. The abscesses are, as a rule, commonest in the medulla and appear as long, single or confluent streaks of varying width. Small abscesses often unite to form large ones. It is interesting that small abscesses and infiltrated foci may undergo healing by reabsorption and scar formation. When this occurs corresponding depressions are seen on the kidney surface and the capsule is adherent at these areas.

Rarely a large abscess becomes walled off by a firm fibrous capsule and the contents undergo fatty degeneration, or it may become the seat of calcareous deposit. Abscesses may break into the perirenal tissues and thus give rise to perinephric abscess, or they may break into the pelvis of the kidney. Occasionally the entire kidney parenchyma is destroyed and the organ becomes merely a large pus sac, the walls formed by the thickened capsules. This is called a pyonephritis. Rarely pyelonephritis is the cause of a general pyemia.

Tuberculosis occurs in several forms:—

1. Secondary, metastatic or hematogenous miliary tuberculosis. This is usually a part of a general acute miliary tuberculosis. The bacilli are carried in the blood stream to the kidney and are deposited in the glomeruli or finer blood vessels of the

cortex causing the formation of small round tubercles, or they may break through the glomeruli and be carried with the urine into the kidney tubules and become deposited there, especially in the straight tubules, and produce tubercles. In this way the streak-like tubercles are formed. The miliary tubercles appear early on the surface as pale, grayish-white, round spots, which sometimes show point-like yellowish centers. When older they appear as slightly elevated, grayish-white spots or as sharply defined, round, caseous nodules, or they may show a more linear form like the abscesses of pyelonephritis.

2. Chronic localized tuberculosis. Of this there are two varieties. The more frequent and important is the caseous-cavernous form. Large cavities are formed. These may communicate with the pelvis. Also called tuberculous pyelonephritis, it may arise in two ways, either by blood infection, the bacilli entering through the renal arteries and producing large caseous tubercles which break into the pelvis, or it may develop as an ascending infection secondary to tuberculosis of any part of the lower urinary tract.

A rarer form is the nodular in which unilateral or bilateral large, solitary or multiple, hard tubercles are formed. These may protrude on the surface of the kidney, giving rise to an appearance very similar to that of new growth. Almost always tuberculosis of the kidneys occurs in persons who have the disease in the lungs, intestines or lymph glands.

It has been described as a primary condition. When only one organ is diseased the other may undergo a compensatory hypertrophy and if the ureter of the affected kidney is involved, causing obstruction, the urine voided may be normal.

Syphilitic lesions are rare and may be in the form of an acute nephritis in the early stage. Gummata rarely occur.

A syphilitic contracted kidney has been described and is distinguished from the other forms by the presence of an arteritis obliterans and marked growth of granulation tissue. Congenital involvement is said to be frequent, an increase in connective tissue being the most constant lesion.

CYSTS.

Isolated cysts are seen especially in old people in kidneys that are otherwise normal. As a rule they are small, but may be very large. The contents of these cysts is usually a clear watery fluid which contains albumin, but they sometimes contain colloid.

Mutiple cysts varying in size from a pin head to that of a pea are often seen in contracted kidneys especially in the arteriosclerotic form. These are usually retention cysts containing clear, watery fluid or colloid material.

Cystic kidney or cystic degeneration of the kidney is seen at all ages. In children the condition is called congenital cystic kidney. Usually the condition is bilateral and the cysts, which vary in size from that of a pea to that of an orange, are frequently so numerous that the enlarged organ may appear as a large tumor made up of a system of cysts, the parenchyma being almost entirely destroyed. The cysts contain, as a rule, a serous fluid but in some of them colloid is found or the contents may be blood stained. The organs may be enormously enlarged, and may exist for a long time without causing any evident disturbance of health, but frequently those who have them die of sudden uremia. They are often associated with a cystic condition of the liver. They may be very large at birth and sometimes cause obstruction to labor.

There are many theories regarding the cause but it is probable that they are congenital and due to developmental anomalies. Some authors regard them as multilocular cystomata.

TUMORS.

Adenomata are usually found in elderly

persons. They are benign and oftenest seen in the cortex as round, soft, white nodules varying in size from that of a millet seed to that of a walnut. Larger ones are rarer. They may be simple or papillary.

Primary carcinoma is rare, and may develop from the epithelium of the urinary tubules or from an adenoma. Kidney stones are frequently found associated and almost always unilateral. Secondary carcinoma occurs in the form of round nodules, usually multiple, and in the cortex.

Fibromata are not uncommon and are seen as small, round, firm, white nodules.

Sarcomata are often congenital and are common in young children. They grow rapidly and may become very large. These growths are soft and friable, white or pale red or darker from hemorrhages, and are very rich in blood vessels. Round cells usually predominate. Spindle-celled and other forms are seen. Degenerative changes and cyst formation may occur.

Hypernephromas of the kidneys are tumors which are believed to be derived from aberrant adrenal tissue in the kidney. Some difference of opinion as to the nature of these growths still exists and they have been called adenomata, sarcomata, carcinomata, lipomata, etc.

Two forms are recognized: The typical, or benign, and the atypical, or malignant.

The benign forms are usually small, from the size of a cherry to that of a walnut, subcapsular in the cortex, sharply defined, yellowish-white, often encapsulatory tumors. As a rule, they give rise to no symptoms and are only discovered at autopsy.

The malignant ones grow rapidly, become very large and frequently give rise to extensive metastases. They are very cellular and frequently show an alveolar arrangement, the cells being very similar to those of the suprarenals. Necrosis, hemorrhage and softening often occur and alter considerably the appearance of the growth. Fatty change is most frequent. The difference between the typical, or benign, and the malignant form is not at all sharp.

DISCUSSION.

Dr. O. C. Gaub called attention to the fact that cases of so-called single kidney should be carefully examined before reported, as many prove to be fusions of two kidneys on one side. The ureteral orifices of these fused kidneys may be in normal situation or appear on cystoscopic examination on one side alone. Regarding the occurrence of hydronephrosis, this condition results from an intermittent obstruction to a ureter. Permanent obliteration of a ureter leads to a destruction of the kidney of that side.

The question of movable kidneys is a very interesting one. It is frequently stated in discussions that hundreds of patients are found with movable kidneys who are unaware of the condition and that only about one or two per cent. require operation. Unfortunately the indications for operating in this one or two per cent. are not given.

Patients presenting freely movable kidneys, which are enlarged and tender on pressure, a trace of albumin with hyaline casts being found in the urine, probably as a result of congestion, have seemed to me to require operation and the relief following operation has justified the procedure. These patients were looked upon as suffering from movable kidneys, but, in the light of recent advances, it appears that they were instances of mild degrees of hydronephrosis, the pelves being dilated as a result of intermittent obstruction of the ureter by kinking. Recently Kelly and others have measured the capacity of renal pelves by introducing a catheter into the ureter, injecting fluid through it until the patient complains of lumbar pain resulting from the tension. The normal capacity of the renal pelvis is about six to eight c.c.

This method of demonstrating the presence of mild degrees of hydronephrosis will enable the physician to separate them from the cases of movable kidneys which are a part of a general visceral ptosis and in which operative procedures are questionable.

Dr. W. A. Clementson reported a case of obstruction of one ureter for five weeks with recovery. There were no urinary symptoms.

The tumor, right side, was directed toward the pelvis with extreme tenderness of right side. There was mental hebetude; also, typical kidney tongue. Recovery was complete. Obstruction of the ureter with hydronephrosis is not a fatal condition.

Dr. Riggs called attention to the part of Dr. Willett's paper which referred to nephritis, of bacterial origin, in children. This is much more common than usually supposed. The youngest patient he had had was less than one year old. There should be more frequent examination of the urine of children from the above standpoint.

Dr. McKinnon said he had delivered a stillborn child with a lateral placenta prævia in a woman who had been operated on by Dr. Simpson for a congenital cystic kidney. The woman recovered from the confinement but the kidney symptoms are still in evidence.

Dr. Sanes said that the intermittent character of hydronephrosis reminded him of an old case of right hydronephrosis that he relieved by catheterizing the right ureter. Inspissated pus was found to have caused the ureteral obstruction both times.

A second case was that of exfoliative gangrenous cystitis. The whole mucous membrane of the bladder was expelled. Contraction of bladder followed; two months later a large right kidney was found, and, on cystoscopic examination, stenosis of right ostium ureter was found. He dilated with ureter sound and passed ureteral catheter and emptied the kidney.

A CASE OF DISSEMINATED SCLEROSIS.

BY THEODORE DILLER, M. D.,
Pittsburg.

(Read before the Allegheny County Medical Society, May 21, 1907.)

Dr. Diller presented a man whom he believed to be suffering from multiple sclerosis. Dr. Diller remarked that this disease has been considered quite rare in this country and, therefore, it seemed worth while to show the patient. The disease commonly begins in early youth and cases beginning as late as this one are rare.

The patient is a married man, an engineer, fifty-one years of age, of excellent habits, and good personal and family history. His present trouble began five or six years ago with staggering and a peculiar change in his speech; these symptoms have steadily grown in intensity. For one year past, the patient has experienced considerable uncertainty in picking up objects, putting on a bolt, etc. He has found that he has to exercise unusual care to avoid spilling fluids or dropping articles which he handles. He has never suffered from pains or other sensory symptoms.

Examination shows the knee-jerks to be much exaggerated; there is some uncertainty in the finger-to-nose test which is not, however, very marked. The patient has considerable difficulty in picking up a small object like a nickel. There is no nystagmus. The patient's gait as you can see is very uncertain and bears a certain superficial resemblance to that of tabes dorsalis. The patient notes a considerable change in his handwriting which has become very ragged and uncertain. He states that he does not have the proper control of his hands when trying to form letters.

Perhaps the most striking evidence of his disease, however, is to be noted in the patient's speech; this is halting and muffled. This speech defect has been called syllabic or scanning as though syllables were separated. It differs distinctly from the speech of paretic dementia. (The patient conversed a few minutes before the members of the society to exhibit his speech defect.) His mental condition is good.

The chief points in the diagnosis are exaggerated knee-jerks, characteristic speech defect, uncertainty in holding or grasping objects (intention tremor), and a slowly progressive course of the disease, the absence of sensory and mental symptoms.

DISCUSSION.

Dr. E. E. Mayer said he agreed with Dr. Diller that the patient presented a clinical picture which indicated disseminated sclerosis. This disease is more common than Dr. Diller seemed to convey, being often unrecognized during life, misdiagnosed, or shown in post-mortem examination. The handwriting in this case was not distinctive, though probably more so when Dr. Diller examined him previously. A beginning white atrophy of the optic nerves often helps in a diagnosis and in one of Dr. Mayer's cases a reversal of the color fields aided him considerably in making a diagnosis. Indeed, where formerly we only made this diagnosis when we found nystagmus, speech disturbance, and apoplectic attacks, we now say a patient has multiple sclerosis from the presence of many obscure symptoms; that is, formerly thought to be so. We take in consideration all symptoms and how they develop and weigh them well.

Reports of County Societies.

ALLEGHENY—May.

The first regular monthly meeting of the Chartiers Valley Branch of the Allegheny County Medical Society was held in the Council Chamber at Ingram, May 29, with Dr. W. P. McCorkle in the chair.

An excellent paper was read on "Summer Diarrhea of Children" by Dr. J. O. Reed of Crafton, which was discussed by almost every member present.

On motion a committee was appointed to arrange with some local dairyman to furnish pure, clean milk for infant feeding. The society will insist on strict cleanliness of the cow's udders, the hands of the milkman, and a thorough cleansing and sterilization with steam of the utensils in which the milk is collected, for its members recognize that by such means only it is possible to obtain a milk tolerably free from bacteria. This milk should be cooled immediately after milking and kept cool, and the infant should have it as soon as possible after milking.

Much interest was manifested at this, our first regular meeting, and it is the intention to make this a society of great benefit not only to its members but to the community at large.

The next regular meeting will be held at the same place, June 26, 1907, at 9 p. m.

Charles A. Orr, Reporter.

CHESTER—May.

The May meeting of the Chester County Medical Society was held in the lecture room of the Y. M. C. A. building, West Chester, May 13. The following were present: Drs. Barry, Baugh, Carmichael, Eves, Ewing, Gifford, Graves, Hoskins, Hutchinson, Patrick, Pennell, Perdue, Reel, Scattergood, Scott, Smith, Spratt, Jackson Taylor, Thomas, Williams and Woodward.

A paper on "Trachoma" by Dr. H. A. Rothrock was read by Dr. Joseph Scattergood.

Dr. Scattergood reported some observations on injuries to the head, based upon cases recently treated by him. He emphasized the need for thorough investigation by the knife under an anesthetic in all serious cases, as it may be impossible otherwise to judge with certainty the extent of the injury.

Dr. Alfred Stengel of Philadelphia was present and addressed the society on "Diseases of the Stomach." He referred particularly to the more recent teachings of Pavloff and others in respect to this organ, regarding its size, position and motor sufficiency of prime importance, and its chemical secretion secondary.

H. Y. Pennell, Reporter.

COLUMBIA—June.

The regular meeting of the Columbia County Medical Society was held at the Central Hotel, Bloomsburg, June 11, at 1 p. m., with President Davis in the chair. Members present were Drs. Altmiller, Arment, Bowman, Brown, Bruner, Davis, Hess, Kline, McCrea, Montgomery, Miller, Reagan, Redeker, J. E. Shuman, Vance, and Dr. Everett, a member of the Lycoming County Society.

The following elections took place: Dr. S. B. Arment, member of the House of Delegates; Drs. G. L. Reagan and R. E. Miller, alternates. Dr. L. B. Kline was nominated for district censor.

Dr. Bowman read a paper on "The Tonsil as an Entrepôt of Disease." Discussion on the paper was opened by Dr. Arment.

A paper on "Articular Rheumatism" was read by Dr. Hess, and the discussion was opened by Dr. Vance.

L. B. Kline, Reporter.

CRAWFORD—May.

The bimonthly meeting of the Crawford County Medical Society was held at Meadville, May 15. Drs. Brittain, Best, Clouse, R. B. Gamble, Hamaker, Jackson, Laffer, Roberts and Taylor were present.

Dr. M. Blanch Best read an interesting and instructive paper on "A Microscopical Study of Epithelioma," which was followed by a discussion.

Dr. Hamaker remarked that his experience with epithelioma had all been of a practical nature. He advised excision if practicable; in other cases, paste of chlorid of zinc and flour or in cancer of the uterus, curetment and cauterization with hot iron. He also reported a case of extrauterine pregnancy upon which he had recently operated with recovery of the patient.

Dr. W. C. Brittain reported a case of a child who at one and a half years had convulsions during teething and after the convulsions ceased had momentary spells of unconsciousness. One year later the child had convulsions, seventeen in twenty-four hours, which gradually disappeared and were followed by spells in which the child would suddenly fall if running or walking, or would drop anything it might have in its hand. These spells continued for some weeks and gradually disappeared.

Dr. R. B. Gamble reported a case of persistent epistaxis in which ordinary remedies afforded no relief. Various treatments were suggested by those present.

C. C. Laffer, Reporter.

DAUPHIN—May.

The regular monthly meeting of the Dauphin County Medical Society was held on May 7, with President Keene in the chair.

Dr. T. S. Blair read a paper on "Drug Therapeutics of Cardiac Diseases." On account of the Doctor's diligent researches, both clinical and experimental, he is eminently fitted to speak on a subject like this. The paper defined the place of the so-called heart remedies, analyzing the physiologic actions of the various drugs from both the objective and subjective points of view and contending that digitalis and strychnin are not always used within their indications. The Doctor dwelt upon the incidental influences of drugs in cardiac lesions, divided these diseases into groups and defined the uses as well as the limitations of the remedies employed. He contended that minor remedies may well be used in minor affections and deplored "the digitalis rut" into which a great many have fallen. He dwelt upon the modern methods of exactitude in the diagnosis of heart lesions and urged an equal amount of study to be given to their rational treatment.

A number of members discussed the paper and expressed their appreciation of its merit.

C. M. Rickert, Reporter.

HUNTINGDON—June.

The Huntingdon County Medical Society met at the Huntingdon Club Rooms, Huntingdon, June 13, with Dr. R. Myers as president *pro tem.* Those present were Drs. Charles Campbell, Evans, J. C. Fleming, Frontz, Harman, Johnston, Keichline, Loudon and Sears, also Dr. L. B. Kline of Catawissa, councilor for the fourth district.

Dr. Kline addressed the society on medical organization, and urged the members to assist in organizing a society in Juniata County which belongs to this censorial district.

Dr. Charles Campbell read a paper on "Membranous Croup, Diagnosis and Treatment." He described the disease as being a particular form of laryngeal obstruction in which a false membrane forms within the larynx. He said there are three forms: (1) That produced by trauma as poisonous vapors or steam. (2) The cases that have a membrane and are not diphtheritic. About twenty per cent. are of this nature. It is apt to be secondary croup of measles or scarlet fever and sometimes of pneumonia. (3) The most important class is true diphtheria. He described the membrane as of a yellow hue; it has a putrid odor; its edges turn up and are bloody. He said it is rare for diphtheria to affect the larynx entirely alone. Treatment: He would administer antitoxin early, in doses of 2000 or 3000 units in a child from three to five years old. This should be repeated in from twelve to twenty-four hours if the patient is not plainly relieved. He would appropriately treat such symptoms as may arise. He spoke of the value of intubation and tracheotomy in the later stages of a desperate case.

The paper was well received and brought forth an interesting discussion.

H. C. Frontz, Reporter.

LEHIGH—May.

A regular meeting of the Lehigh County Medical Society was held at the Administration Building, Allentown, May 14, with the following members present: Drs. M. J. Baekenstoe, Bingaman, Bleiler, Boyer, Butz, Cawley, Dickenshied, A. J. and W. B. Erdman, Fetherolf, Greiss, Guth, W. H. Hartzell, Hendricks, Henry, Herbst, Hertz, Kline, Leh, Litzenberger, Lowright, Pfleuger, W. A. Riegel, Ritter, Schaeffer, Weaber, and Weida.

After the approval of the minutes of the last meeting, Dr. Cawley, chairman of the legislative committee, reported that Dr. Clymer, who had been sentenced and fined for illegal registration and practice, had appealed to the Board of Pardons to have sentence set aside, and, on motion, it was suggested that Senator Dewalt, the society's attorney in this case, be asked to be present at the hearing and oppose the appeal.

Dr. Joseph N. Weaver of Allentown was elected a member of the society.

The first paper was read by Dr. Cawley, on "Sanitation." He referred to the great advancement in hygiene, and the progress and means of improvement in sanitation at the present time. The importance of prevention was to be regarded with more care than, very often, the treatment of diseases. Very few persons, he explained, were immune from disease. Isolation, quarantine and disinfection were the work of the sanitary officer. Quarantine should be made forty days, but this only in extreme cases, because, with modern methods of sanitation, if done properly, this is not often necessary. Rural sanitation at present, he says, is only an apology; they have not made the progress as they have done in towns and cities. In closing his paper, he made a special appeal for the establishment of municipal hospitals wherever possible, as being the best means of taking care of contagious diseases.

The next paper was read by Dr. W. H. Hartzell, on "Four Important Remedies,—Air, Water, Food and Sleep." He referred to these principles as the most important factors in the treatment of all diseases. He took up the subject of ventilation, and explained that in giving plenty of fresh air he cured many of his patients suffering with chest trouble. He advocated open hearths as one of the best systems of ventilation. Water, he proclaimed the wisdom of nature. It flushes the kidneys and bowels, prevents constipation and fattens. In kidney disease, it is the most efficient diuretic. Pure water has its virtue in the treatment of all disease. At the same time, we should not forget that water is the medium by which disease is carried into the system, and we should be careful that it is pure. Impure water is the cause of a large percentage of typhoid fever cases. The medical profession should educate the people that the water supply must be pure. Arguments should be advanced to show the public that pure water must not be contaminated with impure water, or the results would be of no avail. Statistics of deaths from typhoid fever show that the United States and Italy have the highest percentage of deaths from this disease, in the world, the United States losing 33.7 per cent., and Italy, 37.08 per cent. Why this should be we are unable to say. Food is an important factor in the nourishment of man. It must be pure food. It is an important factor in the treatment of consumption, milk and eggs being most nutritious. Fresh eggs are important because they can not be contaminated. Sleep refreshes the tired body, and relieves the mind when it wants rest. In the delirium and distress of typhoid fever, sleep brings back courage and strength. We must guard against the customary use of strychnin in cases where it produces restless and sleepless patients, which it is apt to do when given in excess or for a long time; this I provide for by giving chloral hydrate at night, and strychnin during the day, and, at times, no medicine at all.

The paper was afterward ably discussed by Drs. W. B. Erdman, H. H. Herbst and E. H. Dickenshied.

H. H. Herbst, Reporter.

MIFFLIN—June.

A meeting of the Mifflin County Medical Society was held June 6 in Reedsville, with fourteen members present.

Dr. Stambaugh read a paper on "Nocturnal Enuresis" which was fully discussed by nearly all present. The cardinal points made were to the effect that this ailment is of far more importance than physicians generally think; that we do not make proper examination of the patient's genitalia and his urine; that we are too apt to prescribe atropin or some other well-known remedy and do not insist that the parents keep the child under our care until the cure is complete; that examination will often reveal too long a prepuce that needs circumcision or one adherent to the glans that needs to be liberated; that the urine will often be found too acid or too alkaline, thus causing irritation to the bladder and urethra. Some regarded the disease as depending chiefly upon a neurotic condition and claimed good results from tying a large cloth around the body with a big knot at the back, so that the child could not lie on the back. When lying on the back, children are liable to wet the bed just as they are liable to get "night horse" when in this position.

Dr. Parcels read a short paper on "Splenic Abscess Complicating Typhoid Fever." The pus was liberated by poulticing for nearly three weeks, cutting down to the mass through the abdominal wall and inserting a drainage tube. The tube was removed the nineteenth day and the young man recovered.

Dr. H. C. Lawton of Yeagertown was elected a member of the society, and Dr. B. P. Steele of McVeytown joined by transfer card from the Huntingdon County Society, making our membership twenty-nine.

Dr. Getter reported in detail the unusual points connected with a face presentation in a case of labor, and said that all the efforts he and Dr. Bigelow had made were of no avail in turning and bringing down the feet. Finally they found the only way was to insert the blunt hook in the child's mouth. The woman was delivered and her life saved in this way.

Walter H. Parcels, Reporter.

MONTGOMERY—May.

The regular monthly meeting of the Montgomery County Medical Society was held at the Charity Hospital, Norristown, May 22.

A resolution was adopted giving Dr. P. Y. Eisenberg the authority to write to Governor Stuart in the name of the society, protesting against the antivaccination bill which was before him at that time.

Another resolution was adopted which compelled each member of the society to give up all contract work, including lodge and society work. Members doing contract work after July 1, 1907, will be expelled from the society.

Three new members, Drs. George M. Settle, W. W. Richardson, and Charles M. Wylie, were elected to membership.

Dr. P. Y. Eisenberg read a paper on "Hernia." He said hernia was due to one of two causes, (1) intraäbdominal pressure, and (2) inelasticity of abdominal walls. The word rupture is a misnomer, as there is no laceration or rupture of tissue. The word hernia should always be used. Taxis should never be tried for a long period as the bowel is bruised by this method. Ice over the hernia or anesthesia often aids, but operation should not be delayed more than a few hours as the bowel rapidly becomes gangrenous.

The society then adjourned until the June meeting which will end the regular meetings until September.

Edgar Stanley Buyers, Reporter.

PERRY—May.

At the May meeting of the Perry County Medical Society the following members were present: Drs. Allen, Eby, Hoopes, Gutshall, Johnston, Moore, Orris, Ritter, Shumaker, Thompson, and VanDyke, and Dr. H. W. McKenzie of Duncannon as guest.

Dr. H. A. Lakin of New Germantown became a member of the society.

Drs. W. J. Allen, D. B. Milliken and L. M. Shumaker, who were appointed a committee to prepare resolutions on the death of Dr. J. P. Sheibly, submitted resolutions which were adopted.

The members took for consideration the various forms of dyspepsia which were fully discussed.

Dr. Ritter was elected a member of the House of Delegates of the state society for the ensuing year, and Drs. Allen and Johnston were elected alternates.

Enterocolitis was chosen as the subject for the next meeting, Dr. Moore to write on "Treatment," Dr. Shumaker on "Diagnosis," and Dr. Lakin on "Etiology."

The society adjourned to meet at New Bloomfield on July 10.

A. Russell Johnston, Reporter.

PHILADELPHIA—June 26.

A stated meeting of the Philadelphia County Medical Society was held June 26, at 8:30 P. M., with Dr. Jay F. Schamberg, in the chair.

Symposium on official pharmaceutical preparations.

Dr. S. Solis Cohen, on "The Lack of Necessity for Proprietary Mixtures": Most of the trouble comes from a confusion of terms. "Proprietary" mixtures are not necessarily fraudulent and secret mixtures, for while some "proprietary" mixtures are fraudulent and secret, there are many others which are straightforward, open and excellent. But, in the majority of cases, they are unnecessary because, with few exceptions, a skillful pharmacist ought to be able to compound any mixture which a physician ought to administer to his patients. If a physician is in doubt, he has the choice of two methods without resorting to proprietary mixtures, not to give so many things to the same patient at the same time; or, supposing that all the ingredients are necessary, to put up a number of separate prescriptions and allow the patient to take them at proper times. A third way, and one adopted by Dr. Cohen, is to call up a druggist and ask if there is any physical or chemical incompatibility in a certain combination of drugs and whether it is palatable. In a few cases, however, because of the difficulty of mixing together certain ingredients, because of the difficulty of obtaining a pure article, or because of the advantage of age in preparation, a mixture which can be obtained ready made and which is made by a careful manufacturer may be justifiable. The great objection to many of the preparations is that their administration to different individuals becomes mechanical.

"Official Versus Proprietary Preparations": Dr. Horatio C. Wood, Jr., divides proprietary preparations into those containing but one chemical substance and those containing several. Those belonging to the first class he occasionally prescribes, but with certain precautions. He believes the world would be better off had scientific chemistry never entered the field of medicine. He bases his objection to proprietary preparations upon the impossibility of being certain of their composition, the tendency to increase self-medication, the generally inferior quality of the drugs, and the extortionate prices charged for them. As an evidence of the immense profits made by the drug houses, tables were shown giving the prices charged by wholesale jobbing houses in this country and in England. Because of the peculiar patent laws, prices in America are much higher than in England, where they may be said to be approximately normal. For example, in England aspirin sells for 58 cents per pound, in America for $6.88; in England creosotal costs $1.98 per pound, in America, $9.00 per pound; dermatol 27 cents and $3.00 per pound respectively; while sulphonal, which in England sells for 77 cents per pound, brings the exorbitant price of $21.60 per pound in America. Dr. Wood in closing uttered a most forcible protest as a practitioner of medicine and student of therapeutics against the use of all ready-made mixtures, especially those controlled by drug houses, as hampering seriously the advance of rational medicine. The symptoms of disease being different in different individuals, the treatment must be modified according to the individual case, and he who uses a routine cough syrup is as far astray as the man who has a sure cure for pneumonia or typhoid fever.

Exhibition of Official Preparations: Mr. M. I. Wilbert exhibited a number of official preparations, many of which were either identical with, or therapeutic equivalents of, well known proprietary preparations. The points which he chiefly dwelt upon in his remarks were the superior quality and lower cost of official preparations, misrepresentation in proprietary remedies, and the necessity of coöperation between medical practitioners and pharmacists.

Mr. Frank E. Morgan, in the discussion, laid stress upon the fact that the patient's condition should be diagnosed and the proper remedy provided rather than that the disease should be adapted to any ready-made formula.

Dr. S. Solis Cohen read a letter from Mr. Joseph W. England, saying that what is needed to-day is not more ready-made pharmaceutical preparations, whether proprietary or nonproprietary, so much as a better knowledge of the physical and chemical properties of drugs and a clearer knowledge of the individualities of the patients that take drugs, to the end that there may be the best adjustment of the former to the needs of the latter. Individualism in prescription writing, as a part of individualism in treatment should obtain. The reason that the ready-made formula, as a rule, is not adapted for individual treatment is due chiefly to the fact that it is generally badly "balanced" therapeutically. As striking examples of this were cited the N. F. Elixir of Phosphorus and Nux Vomica, and Basham's Mixture of the previous edition of the U. S. Pharmacopeia. An equally serious fault with the official ready-made preparations is the lack of originality shown in the matter of flavors.

Dr. J. C. Cooper attributes the proprietary medicine evil chiefly to what he terms "American haste and American ignorance." The practitioner asks himself, "What shall I give in order to get the patient out as soon as possible?" whereas the question should be, "What shall I give to cure the patient?"

Dr. W. S. Wadsworth, while deploring the inferior quality and general inadequacy of most proprietary medicines, wishes to make an exception in the case of a few well established preparations which he has always found satisfactory in his practice. He was unfortunate, however, in his choice of listerine as an illustration, which elicited an emphatic disapproval from two other speakers.

Dr. R. M. Goepp suggested that some of the official names of new synthetic preparations which are deservedly coming into use might be shortened and simplified, so that physicians would be more likely to prescribe them instead of the corresponding proprietary articles.

Mr. Henry C. Blair spoke of the great waste in proprietary preparations in most drugstores, hundreds of bottles being yearly consigned to the refuse heap after only a few ounces have been used, as every physician has his own special choice of a manufacturing firm and prescribes its special preparation instead of the corresponding official drug.

The meeting was well attended considering the time of the year and a lively interest in the subject under discussion was shown by those present.

R. Max Goepp, Reporter.

SOMERSET—June.

The Somerset County Medical Society met at Meyersdale on June 18; this was the first bimonthly meeting held and the attendance was not encouraging. However, we will not judge of the benefit of bimonthly instead of quarterly meetings by this meeting.

The next meeting will be held in Somerset on the third Tuesday of August. It matters not how competent and faithful the president and secretary of a society may be, or how hard they may work on program, reports and records, unless the members appreciate these efforts and attend the meetings they will receive no benefit. A greater effort should be made to attend the meetings.

Drs. Franklin B. Lauderbaugh of Addison and Henry A. Zimmerman of Hollsopple were received into membership at this meeting.

Dr. Henry Wilson of Somerset was elected member of the House of Delegates and Dr. W. T. Rowe of Meyersdale, alternate. Dr. C. P. Large was nominated for district censor.

After regular routine business, Dr. Wilson read a paper on "Endometritis." The simple form may be caused by excessive coitus or exposure to cold during menstruation. It is usually symptomatic and never acute. Membranes may be hypertrophied or atrophied. When hypertrophied the vessels are enlarged and bleed easily. Fungoid growths may develop. Menses increased in amount followed by persistent leukorrhea, there may be intermenstrual bleeding, pain in the back, sense of weight in the pelvis. In the atrophied form there is excessive pain preceding scanty flow, slight leukorrhea. Sterility is frequently dependent on the altered state of the endometrium.

The acute form has been pronounced one of the most serious diseases in gynecology. It is said to be the cause of fully one half of all the gynecological cases physicians are called upon to treat. Its causes are mostly gonorrhea, or septicemia following the puerperal state; use of unclean instruments in treating of uterine troubles or efforts to induce abortion may also be the cause.

The anatomy of the uterus must be borne in mind in the treatment of this trouble; the membrane lining the uterus, the blood vessels and glands must also be kept in mind. After labor or abortion there are favorable conditions for the reception and spread of the trouble owing to the traumatism caused by the removal of the placenta and retention of placental tissue. The infection may extend into the Fallopian tubes and thence into the peritoneal cavity producing conditions beyond the limits for discussion in this paper.

The chronic form may follow the simple or acute condition. It may result from nonremoval of secundines after parturition, septic traumatism, tumors, especially fibroid and polypi, excessive coitus and extension of a vaginitis.

There may be leukorrhea, menstrual disturbance, pain in the back and pelvis, sterility, abortion, reflex neuroses. The uterus is enlarged and tender. Baldy says this condition predominates largely in the poorer women and is proportionately hard to treat because of their inability to procure the necessary help and rest required.

As to the treatment, drugs taken by mouth may modify the existing conditions of the system and to this extent can be useful. Curetage is regarded as the necessary routine for the acute form and in many cases of the chronic form. To curet is one thing, but to do it properly is quite another thing as much injury may be done by a careless and unskillful operation. A mental picture of the anatomy of the part should guide the hand. The strictest antiseptic precautions must be observed. After cureting, the same method of treatment should be observed, as near as possible, as would apply to an external wound. Packing the uterine cavity with sterile gauze from one to four times a day, or as many times a week as the case may require and the removal of it will bring away loosened tissue. Medication of the gauze with a solution of ichthyol, resorcin, balsam of Peru, and castor oil will greatly facilitate the healing process. Other drugs according to individual preference may be used.

The paper elicited general discussion.

H. C. McKinley, Reporter.

VENANGO—May.

The Venango County Medical Society met in the city council chamber at Franklin, May 21, with Vice-president F. W. Brown in the chair. The following members were present: Drs. Bridenbaugh, F. W. Brown, Davis, Gilmore, Glenn, McDowell, Moore, Morrow, Nicholson, Shaffer, Taylor, and E. V. Thompson.

The censors reported favorably on the application of Drs. John F. Miller and Winnie K. Mount of Oil City, and Clifford Cooper of Cooperstown. They were elected to membership.

Dr. Nicholson opened the discussion of the day on the subject, "Ethics of a Consultation." In his essay he carried a deep and tender philosophy of ethics and made it stand for the best in man. His philosophy would apply to mankind in general as well as specifically to medical consultations, and the righteous conduct of one practitioner to another. The paper was well received and every member made interesting comments on the subject.

On motion of Drs. McDowell and Taylor it was resolved to hold the next meeting of the society at Monarch Park, that a committee of two be appointed to make all necessary arrangements, and that the expense of dinner be borne by the individuals. Drs. McDowell and Davis were appointed the committee.

The subject for discussion at the next meeting will be "Diphtheria." Dr. E. P. Spencer was appointed to open the discussion.

E. W. Moore, Reporter.

WAYNE—May.

The regular annual meeting of the Wayne County Medical Society was held at the Allen House, Honesdale, May 16, 1907. Dinner was served at 1:30 p. m., and at 2:30 p. m. President Brady called the meeting to order, the following members being present: Drs. Brady, Burns, Cook, Corson, Ely, Griffin, McConvill, Nielsen, Peterson, Powell, Reed, Rodman, Simons and White.

Resolutions of protest against the antivaccination law passed by the legislature were drawn and forwarded to the governor.

The censors reported favorably on the application of Dr. H. J. McClellan of Damascus township (P. O., Callicoon, N. Y.) and he was unanimously elected to membership.

The secretary's annual report showed an increase in membership of five the past year, meetings all held as scheduled, and well attended. Treasurer's report showed a balance of twenty-one dollars in the treasury.

The nominating committee named Dr.

Dwight Reed for president for the ensuing year and he was elected by acclamation, but declined the honor much to the regret of the society. The following officers were elected for the ensuing year: President, Dr. R. W. Brady; vice-presidents, Drs. A. J. Simons and G. T. Rodman; secretary and reporter, Dr. L. B. Nielsen; treasurer, Dr. W. T. McConvill; censors, Drs. E. W. Burns, F. W. Powell, and A. C. Voigt.

Following the election, President Brady addressed the society in a happy manner.

The committee on insurance fees was discharged as a number of physicians, not members of the society, had refused to cooperate in securing united action in opposition to the reduction of examining fees. The matter was left to be determined by the individual members.

The program for the coming year was approved.

Resolutions expressing the respect of the society for the late Dr. Dusinberre, an honorary member, were approved.

The following papers, comprising the symposium on diseases of children, were read and discussed: "Feeding in Infancy" by Dr. L. B. Nielsen; "Diphtheric Croup and Its Treatment" by Dr. W. T. McConvill; "Hip Joint Disease" by Dr. H. Cummings White.

Adjourned. L. B. Nielsen, Reporter.

WESTMORELAND—June.

The meeting of the Westmoreland County Medical Society was held in the parlor of the Grand Hotel at Monessen, Tuesday, June 18, with the following present: Drs. Begger, Burhenn, Byers, Day, Gordon, Griffith, Horner, Hunter, Kregar, F. L. Marsh, Shirey, Taylor and A. R. Wilson.

Dr. F. L. Marsh read an interesting paper on "Tetanus and Its Treatment." Dr. O. J Kregar presented a paper on "Premature Separation of the Placenta with Report of a Case." The discussion of "Thermic Fever" was opened by Dr. H. W. Day.

The session was a short one but instructive. Our society is growing and the members are taking an interest in the work. The next meeting will be held at Latrobe on August 6.

M. W. Horner, Reporter.

Medical Board Examinations.

Members of the Board Representing the Medical Society of the State of Pennsylvania

Dr Henry Beates, Jr., 260 So. 16th St., Philadelphia.
Dr. Winters D. Hamaker, Meadville.
Dr. Robert W. Ramsey, Chambersburg.
Dr. M. P. Dickeson, Media.
Dr J. Guy McCandless, Pittsburg.
Dr. James B. Walker, Philadelphia.
Dr. Francis R. Packard, Philadelphia.

LIST OF QUESTIONS SUBMITTED AT THE MEETING OF THE BOARD, JUNE 25-28, 1907.

ANATOMY.

1. Describe the portal system.
2. Describe the palmar fascia.
3. Describe the knee joint, give its articulations, and name and describe its cartilages.
4. Give the origin, foramen of exit, and distribution of the pneumogastric nerve.
5. Give the surface topography of the fundus of the gall bladder, lower border of the spleen, and the apex of the heart.
6. Give the length, course and relations of both the male and female ureters.
7. Describe the uterus, its position and relations.
8. Describe the stomach, name its coats and give its blood and nerve supply.
9. Locate the foramen of Winslow and name the structures in relation therewith.
10. Describe the bones forming the nasal fossæ, and name accessory sinuses communicating therewith.

PHYSIOLOGY.

1. Discuss the flow of blood in the capillaries, and explain why the capillary circulation occupies so important a place in the vascular system.
2. What is the normal rate of respiration per minute, and the ratio it bears to cardiac rhythm?
3. Explain how nutrition of the heart is effected, and name the sources of supply to the myocardium.
4. Summarize the functions of the blood, and specifically enumerate those of the erythrocytes and leukocytes.
5. Describe the three principal functions of the liver.

PATHOLOGY.

1. Discuss fatty degeneration, explaining of what it may be a symptom when affecting parenchymatous cells.
2. Discuss the effects of an exudative type of inflammation upon structure, and explain how and why function may be permanently impaired.
3. Give a minute description of and explain the process occurring in necrosis of bone.
4. Describe the changes in the wall of an artery occurring in any form of aneurysm.
5. Define embolism, and describe its sources and nature.

PRACTICE AND THERAPEUTICS.

1. What are the symptoms of aneurysm of the arch of the aorta?

2. What are the symptoms of acute suppurative appendicitis?

3. What are the symptoms of locomotor ataxia?

4. What are the symptoms of obstructive jaundice?

5. What are the symptoms indicative of intestinal perforation in typhoid fever?

6. How would you treat a case of intestinal perforation in typhoid fever?

7. Name some of the indications and contraindications to digitalis.

8. Give some of the indications for the use of the following drugs as cathartics, and the dose of each:—

(a) Castor oil.
(b) Calomel.
(c) Magnesium sulphate.

9. Name some of the drugs used as diuretics and state the conditions in which they are severally indicated.

10. How would you treat a case of cardiac dropsy?

SURGERY.

1. Describe the symptoms of mastoid abscess and an operation for the relief of same.

2. Describe in detail an operation for the repair of a laceration of the female perineum.

3. Describe the proper technic of uterine curetage; name conditions indicating and contraindicating this operation.

4. Describe the essential principles involved in an operation for the radical cure of inguinal hernia in the male.

5. Describe in detail the technic of tracheotomy.

6. What symptoms in fracture of the skull demand immediate operation?

7. Describe in detail symptoms of internal abdominal hemorrhage, name conditions in which it might occur and outline the treatment.

8. Define volvulus and give the symptoms and treatment.

9. Give the symptoms and treatment of a fracture at the upper third of the femur.

10. Give the symptoms of a backward luxation of the forearm and method of reduction.

OBSTETRICS.

1. Give the symptoms of ectopic pregnancy and describe the treatment.

2. What are some of the prodromic symptoms of eclampsia, and how should you treat a patient thus threatened?

3. What are the causes of asphyxia neonatorum? Give treatment.

4. Describe delivery of child presenting by the breech.

5. What importance is attached to antepartum hemorrhage? Give causes and treatment.

6. Give treatment of pernicious vomiting of pregnancy.

7. What antiseptic precautions should be taken before and after delivery, with reference to attendants, mother and child?

8. What is the "bag of waters," what is its use, and what precautions are necessary in relation to it?

9. What precautions should be taken to avoid laceration of the cervix and perineum, and if they occur what should be done and how do it?

10. What measures should be taken to prevent ophthalmia neonatorum?

CHEMISTRY.

1. Name five morbid products which may be present in urine and give a reliable test for each.

2. Give the normal degree of acidity of the gastric juice and describe a method of determining the relative acidity in a given case.

3. Give a test for the detection of blood in any secretion.

4. Give a chemical method for converting "hard" into "soft" water.

5. What chemical tests are used for detecting the presence of organic impurities in water?

MATERIA MEDICA.

1. Name an official solution containing mercury, iodin, and arsenic, and state approximately how much of each substance is contained in one dram, or 1 c.c. of the solution; also give the adult dose.

2. Name five drugs incompatible with a mixture containing iodid of potassium.

3. Name the ingredients which enter into compound extract of colocynth.

4. Discuss hydrastis canadensis, giving chief active principles and important preparations.

5. Write a prescription for a four ounce mixture containing bromid of potassium in combination with the active principle of hops.

DIAGNOSIS.

1. Give the early diagnostic symptoms of locomotor ataxia, and differentiate between this disease and multiple neuritis.

2. Differentiate carcinoma of stomach and chronic pancreatitis.

3. Diagnosticate two varieties of cirrhosis of the liver.

4. Differentiate the more common late cutaneous and periosteal syphilitic diseases, and the nonspecific diseases which closely resemble them.

5. Differentiate delirium tremens and cerebral meningitis.

HYGIENE.

1. What measures would you use to prevent the spreading of infectious and contagious diseases?

2. State the principal causes of infantile mortality, and what hygienic measures you would employ to reduce the mortality rate.

3. What diseases may be transmitted through the agency of (*a*) the soil, (*b*) water, (*c*) air, (*d*) insects?

4. Describe an approved method of ventilating the sick room and explain the principles involved.

5. What principles should be observed for preventing eye-strain in the school room?

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X. No. 11. | Athens, August, 1907. | Subscription: $2.00 Per Year.

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Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association: President, Joseph D. Bryant, New York; President elect, Herbert L. Burrell, Boston; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago.
Next Annual Session, Chicago, 1908.

Original Articles.

REPORT OF A CASE OF PERNICIOUS ANEMIA WITH JAUNDICE.

BY JOHN G. WILSON, M. D.,
Montrose.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Jaundice, due to a variety of causes, is quite frequently encountered in cases of pernicious anemia. This disease is but imperfectly understood and I report the following case which I think somewhat unusual, hoping it may be of interest, as I fail to find a similar one after quite an extensive search of the literature.

Mrs. A. was fifty-five years of age. Her father died of tuberculosis at the age of fifty-five years and her mother at the same age of some wasting disease accompanied by anemia.

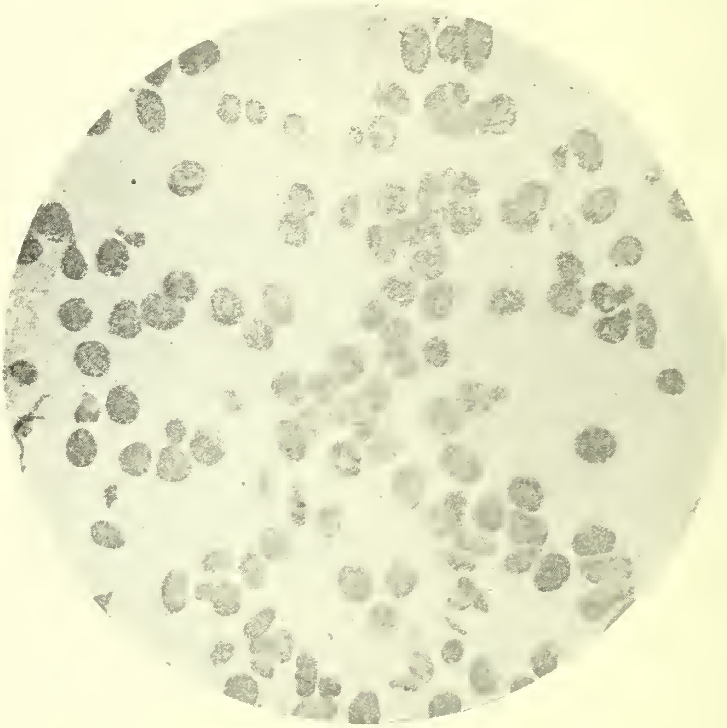
The patient had two children, sixteen and eighteen years of age, and enjoyed good health until about three months before her death. She first consulted me for a feeling of general weariness and stated that she had an irritable bladder. The pulse rate increased upon exertion. Appetite was indifferent. Heart sounds were weak and there was some pallor of the skin.

Examination of the urine showed the same to be normal except an excess of uric acid, which, being corrected, caused no further annoyance.

I saw her again in about a month and was startled to see the pronounced change in her condition. She was very pale; a slight lemon color was manifest. She had palpitation of the heart, but no valvular disease. She complained a little of nausea. Her general condition was such as to suggest a case of grave anemia. It took a severe puncture to get a drop of blood. The first drop or two was thin, watery serum, then a fair-sized drop shot out which was thin and almost tar black in color.

Examination of the Blood. Hemoglobin, 20 per cent.; red blood corpuscles, 832,000, many very irregular in form and the great majority two to three times as large as normal. Some microcytes were present. An occasional nucleated corpuscle was found. More normoblasts than megaloblasts were noticeable. Leukocytes, 2500 per c. mm. Small lymphocytes and Polynuclear neutrophiles about equal in number. An occasional megalocyte was present. The blood certainly showed the typical megaloblastic condition and the diagnosis of pernicious anemia was made.

Treatment. I gave Fowler's solution and strychnin. In about three weeks, blood count was red blood corpuscles, 1,336,000; white blood corpuscles, 2500; hemoglobin, 30 per cent.



Cover slip preparation showing megaloblastic condition of the blood

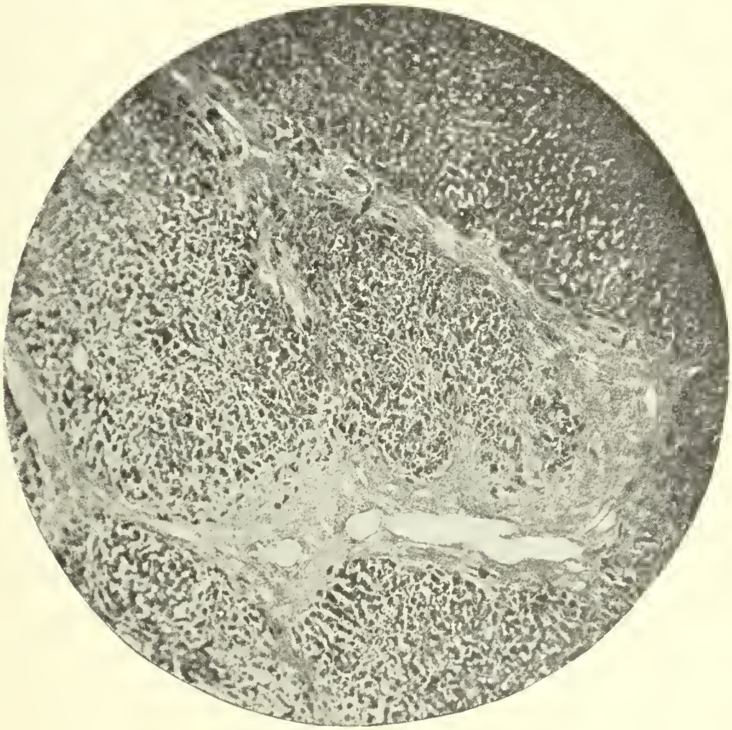
The patient continued to grow weaker, pulse full and soft. Blood pressure averaged 110 mm., taken with a Riva Rocca apparatus. Heart sounds continued normal. She had but little nausea.

Examination of stomach contents showed normal amount of HCl, etc., present.

About a month before death, jaundice developed, which deepened gradually until the patient became a golden yellow over the entire body, and the whites of the eyes were perfectly yellow. The lips were rather a dark blue. There seemed to be no enlargement of the liver or spleen. There was no soreness or pain of any kind on pressure in the region of the liver, nor in the region of the stomach nor under the shoulder blades. In fact, there was no train of symptoms to suggest a reason for the jaundice. The stools remained normal in color until death and never contained any signs of parasitic organisms. The urine became dark green and covered with a golden yellow froth when passed. Specific gravity was 1.012. Upon the addition of HNO_3 it turned red and, when heated, cleared up. It failed to react to Gmellin's test. A spectroscopic examination showed the presence of urobilin.

During the last week there was a slight elevation of temperature at times and some bleeding from the gums, lips and nose, though small in amount. The patient became comatose and passed away.

Autopsy. With the first incision, thin coffee-colored blood poured out from every vessel, but left almost no stain on the sponges. Subcutaneous fat was well preserved and the muscles had a reddish tinge, but the omentum and intestines were almost white. All the abdominal organs bled profusely when handled, and the blood showed no tendency to clot. After standing two hours, a vessel holding a quart contained a clot no larger than a hickory nut, and that was not at all firm; the broken down corpuscles settled and left a clear serum on top.



Section of the liver showing mild cirrhosis.

The spleen and kidneys were normal except that they were much paler than usual. Test for iron proved negative. I carefully examined the stomach and pancreas but found no nodules nor other changes.

The liver was normal in size, but the color was dark green, studded with little nodules about the size of a pin head. It was somewhat hardened and leathery to the touch, and the hepatic ducts were distended with bile. The gall bladder was normal in size with the walls somewhat thickened and filled with yellow bile There was no evidence of stone in the ducts or gall bladder, and the ducts seemed to be open although the liver contained a large amount of bile.

A microscopical examination of the liver showed a mild cirrhosis. Upon section, an increase of connective tissue was manifest. Some parts showed an extensive infiltration of fat with degeneration of the liver cells and a large amount of bile pigment was deposited in some of the liver cells.

The liver contained 0.0325 per cent. of iron by weight, calculated to the wet alcoholic preparation.

I would account for the jaundice in this case partly by the destruction of the red blood corpuscles, as the amount of bile pigment stored up in the liver cells can in no other way be accounted for, and it has been known for a long time that great blood destruction will give rise to bile pigment in the urine; also partly by the damming up of the bile under pressure in the liver ducts and capillaries, which, being weakened by the fatty degeneration, caused them to break down and allowed the bile to be taken up by the lymphatics and pass directly into the blood.

DISCUSSION.

Dr. Judson Daland, Philadelphia: I think we have all appreciated the remarkably clear history of this typical case of pernicious anemia. I should like to ask whether there was present indican, acetones or any evidence of intestinal toxemia. The history is that in most of the cases of progressive anemia the underlying cause is some toxic poisoning, the nature of which is not yet well known. The importance of the determination of the cause of pernicious anemia to the practical physician is enormous, because the treatment becomes purely symptomatic and also because the disease is amost universally fatal. If we were able to determine the cause rather early in the disease before the widespread changes take place, we would have an opportunity of relieving a certain number of these cases. Therefore, each of these cases is of the utmost importance when every known or ordinary cause has been excluded, and we may consider the possibility or probability of the poison being of intestinal origin. If indicanuria is present more or less constantly, it gives us a very fair reason for believing that the anemia is secondary, due to intestinal poisoning. As soon as that is established the treatment becomes dietetic. Many cases do not show indicanuria even when all the other causes are excluded. The prospects regarding recovery are somewhat improved, if one accepts the teaching that the origin of the anemia is in the intestinal tract, and treats the patient accordingly.

Dr. Wilson, closing: In answering Dr. Daland, I would say that acetone and indican were not present in the urine.

PERINEAL PROSTATECTOMY—ITS ACCIDENTS AND COMPLICATIONS.

BY L. JAY HAMMOND, M. D.,
Surgeon to the Methodist Episcopal Hospital, Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The progress made in prostatic surgery during recent years has been so continuous and progressive in affording both immediate comfort and permanent improvement in micturition that one might naturally ask to what purpose further controversy would serve. When, however, we recall that these happy results have been secured without, up to the present time, anything like perfect technic, it is but natural to conclude that the near future will bring forth practical immunity from the long chain of complications growing out of obstructed urinary flow.

To accomplish these achievements, it will be necessary not only to be accurate in diagnosis, which is comparatively easy, or to have promptness in operative interference, but, what is more important, to be familiar with the anatomic relations of the parts as well as the associated pathologic possibilities that are more often than not necessary to deal with.

Time will not permit a discussion of the various operative procedures that are employed in dealing with the hypertrophied prostate, nor does it seem of any particular value to do so as any and all seem to possess merit in selected cases. The best results, however, in my hands, have followed the perineal operation, either the simple vertical or curved transverse incision being employed.

Indications. The indications for the operation may be classified as follows: (1) Impossible catheterization or nearly so; (2) permanent hypertrophy of the prostate, with well defined tumor; (3) residual urine in large amounts and rapidly decomposed; (4) frequent and painful micturition; and (5) acute cystitis.

Contraindications. There is but one contraindication even at the present time,—advanced pyelonephritis associated with general arteriosclerosis, and as this condition is directly the result of delayed opertive treatment, it, in the near future, should be entirely removed.

The accidents that occur during the operation are more often the immediate cause of operative death, as well as being responsible for complications that follow, than any other conditions connected with the operation itself, the operation *per se* contributing but little, if anything, toward mortality.

The dissection from the perineal incision to the rectovesical space supplies about all the opportunities for accidents during the operation for perineal prostatectomy. These accidents are especially likely to occur when inflammatory conditions have both altered the relation and caused agglutination of the parts. These accidents may be classified as follows: Tear of the rectum; tear of the urethra; tear of the bladder-wall; troublesome hemorrhage from accidental injury to the prostatic plexus of veins.

It may not be out of place to state that the first three of these accidents occurred to me in operation on my first case, the responsibility for which I feel lies in the inadequate teaching of the subject in the systematic works. After a most profound and prolonged shock, however, the patient fortunately recovered.

As a means of avoiding these accidents or at least making their occurrence less frequent, it is well before making the incision to stretch the sphincter in order to keep the rectum entirely emptied of all gas, as in these patients it is so often thoroughly distended and therefore kept, throughout its course, continuously within the field of operation. When it is collapsed and the dissection is made above the rectovesical fascia, no further danger of wounding it occurs until the anterior edges of the levator ani are brought into view and retracted. This exposes the recto-urethral muscle, where, unless careful partition is made, extensive tearing may take place both into the rectum and urethra.

Experience has taught me, after transverse division of the fascia, to carry my dissection forward toward the bladder, the guide for which is the staff previously introduced into the bladder. If the ano-bulbar raphe, which extends from the posterior extremity of the bulb to the anus, be put on the stretch and divided when reached, the possibilities of tearing the urethra in the dissection should also be greatly lessened.

Unnecessary tear of the urethra, and the bladder as well, can be avoided by making the opening into the membranous urethra adequate to admit the tractor, if one is to be employed, without using force. I am not quite convinced from my own limited experience that tractors are by any means always necessary or indeed that they are not at times distinctly harmful. In one case, I am convinced, the tractor devised by Young did produce extensive traumatic sloughing of the bladder wall. With the ordinary stone searcher I have been able to hook down and fix the prostate quite as satisfactorily as with either the tractor devised by Young or the Parker-Syms.

As the prostate urethra often possesses no walls other than a mucous membrane, tearing can further be guarded against by leaving intact that portion of the prostate next to the urethra, and this, too, without lessening the certainty of permanent good as it may be said that all prostatectomies are partial and that cicatrization has to be relied upon to complete their destruction. To leave intact the distinct urethral attachment not only removes the danger of extensive tearing of the urethra and bladder, but as well lessens the risk to the ejaculatory ducts and removes the possibility of permanent incontinence of urine.

While I agree with Deaver that there is probably nothing gained by endeavoring to conserve sexual functions in these cases, I do feel that to be able to leave them intact greatly lessens the shock and certainly incontinence of urine is less likely to follow.

In those cases where the prostate is not too fibrous, adherent, or distinctly pedunculated, and, as a result of these, too high, room may even be had for dealing with the prostate without more than nicking the levator ani on both sides and retracting the transversus perinei forward after dividing the external sphincter ani and recto-urethral muscle. The size of the lateral lobe, however, will determine the extent to which division of the muscle is necessary, though with blunt dissection and thorough retraction sufficient room for enucleation in a large percentage of cases can be had.

Complications. These may be said to be dependent entirely upon the accidents during the operation and, therefore, the more perfect the technic, the fewer would be the complications: (1) Shock; (2) fistula, which may be (a) urethral, (b) vesical, (c) recto-urethral, (d) rectovesical; (3) permanent incontinence; (4) sepsis; (5) uremia; (6) pneumonia; and (7) cystic calculus.

Permanent good follows the operation with a mortality, according to the most reliable statistics, of 6.2 per cent.

DISCUSSION.

Dr. William L. Rodman, Philadelphia: I regret that we did not have the pleasure of listening to the other two papers on prostatectomy, inasmuch as they were to take up the suprapubic or high route. Undoubtedly there is a field for both operations, and it would have been profitable to have heard the other side of the question, as well as the perineal. I am inclined to take the same view that Dr. Hammond does about the desirability of routes. I think as a general rule (there are, of course, exceptions) it is better to take out the prostate from below than by the suprapubic route. I can not see any good anatomical or surgical reason why we should go through the bladder wall twice in order to get at the prostate, when it can be entered from the perineum without practically entering the bladder cavity. It seems to me that the perineal method is the one of choice in the majority of instances. If, however, the prostate be very large, or if the enlargement be mainly that of the middle lobe, which projects into the cavity of the bladder, then, unquestionably the suprapubic method offers advantages and can be done more expeditiously than the perineal.

As to technic, I think undoubtedly the method of Young has advantages over the transverse operation performed by Dr. Hammond. It is very easy to bring the entire prostate into view by the use of Young's incision. It makes what is usually a difficult operation, done entirely by the sense of touch, comparatively easy, where every step can be carried out accurately under the eye. I have been completely won over by the operation of Young; it seems to me it is far in advance of any other method I have seen tried. As I said, it makes it so that you can see every step of the operation, and this undoubtedly prevents injury to ejaculatory ducts and unnecessary trauma of the urethra and neck of the bladder itself. As to the use of the retractor, it seems to me it is of value, as a general rule, although undoubtedly the prostate can be brought down without the use either of the retractor employed by Dr. Young or the inflated rubber one of Parker-Syms. It seems, however, that some form of retractor will be necessary to complete the operation. While I have seen a great many suprapubic operations, and while it can perhaps be done a little more quickly, I think with Dr. Hammond that the perineal operation is the better one. It gives more satisfactory drainage than the suprapubic operation, and unless there is some reason for going above, such as stone, or some other intravesicular condition that must be attacked from above, I should, as a very general rule, prefer the perineal route.

Dr. John B. Roberts, Philadelphia: I have been rather inclined to favor the suprapubic route, but I think with Dr. Rodman and Dr. Hammond, the route should be chosen after a careful study of the individual case.

Dr. Hammond, closing: I am entirely in accord with the views expressed by Dr. Rodman, when the middle lobe is enlarged, as to the value of the suprapubic route. It is also my belief that the operation employed by Young has great merit, furnishing, as it does, a roomy field for operation, which is especially important in these cases where a distinctly fibrous, high and adherent prostate has to be dealt with. In my own experience, however, I have not found his tractor always as readily employed without danger, as have others; indeed, I have not always been compelled to employ a tractor as such, in all my work, finding it quite as satisfactory, where the gland was adenomatous, to use the ordinary stone searcher for the purpose of bringing down and turning out the gland.

PROSTATECTOMY.

BY JOHN B. DEAVER, M. D.,
Philadelphia.

That prostatectomy is now one of the well recognized surgical procedures is acknowledged, I dare say, by us all; that the prejudice that formerly existed against the operation is largely a thing of the past we are glad to say; that this is the result of a much smaller mortality than formerly, as for example the last twenty-four consecutive operations performed by the writer without a fatality, is proof of the statement; that the ultimate results are most satisfactory; and that, the richer our experience, the better able we are to select our cases, to tell the ones that should and those that should not be subjected to radical operation.

The question most discussed to-day is the superiority of the two operations, the suprapubic and the infrapubic, or perineal. It is my personal belief that the suprapubic operation is preferable to the infrapubic in by far the majority of cases, because the more common pathological condition of the prostate is adenomatous or glandular enlargement, and that this type of enlargement can be better and more successfully dealt with by the suprapubic route. This I will try to show by anatomical deductions. I further believe that there is a class of cases of enlarged prostate, the small hard gland in particular, that can be more successfully handled by the infrapubic route.

The chief advantages of the suprapubic over the infrapubic, or perineal, operation are: (1) The ease and rapidity with which the gland is removed; (2) by this route the entire gland is taken out, usually as a whole; (3) the traumatism inflicted is much less than in the infrapubic, or perineal operation; (4) the vesical neck is not injured in this operation, while in the infrapubic not only is the vesical neck injured (which takes in the internal vesical sphincter) but also the external vesical sphincter, the compressor urethræ, this being cut when incising the membranous urethra.

It is not to be wondered that more traumatism is inflicted in the infrapubic, or perineal, operation. By the infrapubic route more important structures are encountered; for example, the bulb of the penis, the artery of the bulb, the inferior pudic vessels, the levator ani muscle and the rectum, injury to which can occur if a careful dissection is not made recognizing the recto-urethral muscle; the aponeurosis of Denonvilliers, and even under these circumstances the rectum has been injured.

I may remark that the aponeurosis of Denonvilliers is an important structure, since it attaches rather firmly the prostate gland to the rectum. This aponeurosis is formed by two of the three layers into which the rectovesical fascia divides—the middle and the inferior—the middle layer passing below the prostatic plexus of veins, beneath the prostate and the bladder, and above the rectum, and joining its fellow of the opposite side, while the inferior layer hugs the superior surface of the levator ani, and blends with the outer coat of the rectum. In suprapubic prostatectomy this structure is not disturbed, which effectually prevents urinary extravasation into the perirectal and subperitoneal cellular tissues.

The ejaculatory ducts and the prostatic urethra are damaged irreparably in the suprapubic operation in practically all cases, while in the infrapubic operation the ejaculatory ducts are claimed by some operators to be left intact, this being accomplished by allowing the portion of the prostate through which they pass and upon the surface of which they empty to remain; that this is altogether problematical, I think we must admit. In adenomatous enlargement I would regard it impossible to leave the ducts with certainty, to say nothing of the risks of further trouble from increase in growth of the portion of the gland allowed to remain. The preservation of the ejaculatory ducts I regard as entirely unnecessary, as it is extremely improbable that semen, without the admixture of prostatic fluid, is fertile. The destruction of the ejaculatory ducts does not of itself cause impotence. Impotence often exists as the result of the enlarged prostate. It has been stated that removal of the gland under these circumstances may restore sexual potency, yet of this I am not sure. I have knowledge of patients upon whom I did a suprapubic removal of the gland who told me that they were able to have pleasure from sexual intercourse which before the operation had been painful to them.

The impression made upon the patient's mind by telling him that his ejaculatory ducts will be saved by the infrapubic operation but destroyed if the suprapubic operation is done, I can see, might have a wholesome effect in influencing him in favor of the former procedure, but those of us who are not tinctured with Christian science will advise the patient to have the operation that gives the best results with the minimum risks of disagreeable if not irreparable sequelæ. The anatomical reasons for selecting the suprapubic operation are that the approach to the prostate by this route is through structures less vascular and less liable to permanent injury from the necessary manipulations. These structures are, moreover, not required for the function of urination. The prostate lies upon the triangular ligament and above the aponeurosis of Denonvilliers; neither of these structures, so important in completing the floor of the pelvis, is divided when the prostate is lifted off them, and delivered into the cavity of the bladder. When the prostate is adenomatous in character its enucleation is accomplished with surprising ease. I have many times enucleated the gland in less than two minutes. Whether the prostatic urethra is removed or not makes apparently no difference in the functional result. In many of the modern infrapubic or perineal operations the prostatic urethra is sacrificed. That stricture may follow either the suprapubic or infrapubic operation is true, but that it is more likely to follow the infrapubic can not be disputed. In forty-nine of the writer's cases which have been kept track of, stricture occurred twice, but in neither instance do I think this would have occurred had the patients done as advised; namely, be bougied from time to time. In one of these cases the patient returned to the writer when the passage of a full sized steel sound a few times remedied the trouble, while in the other case, the patient consulted another surgeon who opened his bladder suprapubically to correct the condition. An objection made to the suprapubic operation is that two incisions are made in the bladder wall, one on its superior surface, to enter its cavity, and another in its floor to reach the prostate: and it is pointed out by the advocates of the infrapubic operation that the organ whose removal we are attempting lies entirely outside of the bladder, and that by the infrapubic, or perineal, approach the bladder wall is not divided. This argument will not hold good for those surgeons who enter the cavity of the bladder in the infrapubic operation before beginning the enucleation, and who certainly injure the floor of this organ during their manipulations; while those who approach the prostate by a dissection through the perineum make an extensive dissection, cutting the recto-urethral muscle, disturbing the aponeurosis of Denonvilliers and separating the rectum and working around, if not dividing, the base of the triangular ligament, thus making an extensive wound which is more apt to leave a permanent fistula than is the operation above the pubis.

Of the forty-nine suprapubic operations referred to in this paper, in not one was there a permanent fistula, nor has there been incontinence of urine. This is not the after history of perineal prostatectomy as learned by the examination of the histories of reported cases, to say nothing of those that are never published.

In the selection of cases for operation the character of the enlargement, if adenomatous, fibrous or carcinomatous must be determined by carefully eliciting the symptoms, by examination of the bladder with sound combined with rectal palpation, and, if necessary, by making a cystoscopic examination. Cystitis, if present, and the amount of residual urine should be determined. The amount of urine passed each twenty-four hours for three or four days, the percentage of urea, the specific gravity and the color of the urine must be learned. Chemical and microscopical examination of the urine should always be made, yet I rely more upon the amount of urine passed each twenty-four hours, the specific gravity, the color and the amount of the urea than upon the chemical and microscopical findings. In doubtful cases I am very careful to have the urine studied for tubercle bacilli. I am always careful of the condition of the circulation.

In the presence of a weak heart with or without valvular disease, I give digitalis for a few days before operation if I regard the case an operative one. I am averse to giving strychnin as freely and in such large doses as is the practice of many. I believe there is but one reliable heart tonic, digitalis—and being a diuretic as well, it is doubly indicated in the class of cases under discussion. I dare say that if it were not forbidden, every patient in your hospital ward, if left to the new house doctor, the recent graduate, would be taking one twentieth to one thirtieth of a grain of strychnin three or four times a day, even in the cases where a diagnosis has not been made; also that every patient after operation, whether it be the removal of a toe nail, a circumcision or an abdominal section, would be taking the same.

The patient having been prepared (the chest, arms and legs swathed in cotton) and placed upon the operating table upon which is a hot water bed, the anesthetic (chloroform or ether) is given. To the patient with a very low percentage of urea, decrease in the normal amount of urine in twenty-four hours and having a high tension pulse, chloroform, in the absence of a diseased heart, is given while in the rest of the cases plain ether is given. The patient being under the anesthetic, the bladder is partly distended with warm boric acid solution, the catheter through which the solution is introduced being left in the bladder and the patient placed in the high pelvic position until the enucleation is made, when the patient is brought into the horizontal position and the operation completed. I do not care to keep the patient in the high pelvic position but for the shortest time possible on account of the danger of diaphragmatic embarrassment.

With the bladder opened by carrying the incision through the right rectus muscle, the superficial wound with the wound in the bladder are retracted by placing four small retractors, one in the anterior angle, one in the posterior angle and one on either side, thus exposing to view the interior of the bladder with the prostate, which is seen projecting into the bladder. The right hand is now disengaged and the index finger alone or with the middle finger is introduced into the rectum and the prostate carried upward, making the gland still more prominent in the bladder. One or two small incisions, depending upon whether the enlargement is much more pronounced in the one than the other lateral lobe, or that both lobes are equally prominent, are carried through the mucous membrane covering the most prominent portions of the prostate, and with the index finger of the left hand, using chiefly the finger nail, the gland is enucleated by separating the sheath from the capsule, hugging the capsule closely all through the dissection. When it can be done the prostatic urethra is left, but in my experience this is rarely possible. The mucous membrane lifted off the prostate in the enucleation is pushed into the cavity made by the removal of the gland, with the ends of the fingers, in this wise hoping to control oozing. The cavity contracts very materially immediately after the gland is removed, showing that the integrity of the tissues of the neck of the bladder have not been impaired. The bladder is now flushed with hot boracic acid solution when, if there is bleeding that is not controlled, the cavity made by the enucleation of the prostate is easily inspected by grasping the margins of the mucous membrane with long tissue forceps. When the bleeding from this cavity is rather smart I pack it with a piece of sterile gauze which is held in place by a catgut suture going through the cut margins of mucous membrane and the gauze. This I regard much safer than to trust to the gauze remaining in apposition with the sides of the cavity without suturing, as when it becomes saturated with urine the contractions of the bladder wall may displace the gauze and allow the bleeding to recur. I have lost but one patient that I thought was allowed to bleed too much and that was before I resorted to the packing. It is very important, we well know, to allow the loss of as little blood as possible in these old people, not only on account of the immediate effect of such loss but the remote consequences as well. I have no doubt that a large percentage of the deaths are attributable to this loss of blood, while they are recorded under other heads. The patient who has lost blood is more likely to be the subject of complications than he who has been taken through this operation without the loss of practically any blood. The bleeding having been controlled, a suture is carried through all the tissues divided, including the bladder walls, a large rubber drainage tube, fully one half inch in diameter is introduced into the bladder and the wound closed at the upper angle only by layer suture and the suture taking in all of the tissues tied loosely. The wound being dressed, the patient is ready for bed.

It will have been seen that the suprapubic operation is done step by step under the guidance of the eye, that it is a careful dissection, and, barring the removal of the prostatic urethra and the destruction of the ejaculatory ducts, the tissues involved in the operation have been but little, if any, damaged. It is not an operation done in the dark as some of its opponents have been pleased to express it.

The most important part of the after treatment of cases of suprapubic prostatectomy is the nursing, which should be in the hands of one who has had experience with these cases. I know of no other class of cases where an experienced, kind, faithful and trustworthy nurse can do more for the comfort of the patient. These patients require a great deal of attention, in fact almost constant care by which, if they receive it, their convalescence is materially hastened. The bladder must be kept clean by flushing once or twice daily or oftener if the occasion calls for it. The patient's nourishment for the first week should be simple but nutritious. It is my practice to allow first albumin water and Celestine vichy, then milk and Celestine vichy with table water as much as the patient cares to drink, providing the stomach accepts it kindly. These patients usually make an uninterrupted recovery. We are always more or less concerned about the quantity of urine the patient passes, which can not be definitely determined for the first few days as there is a certain amount of leakage around the drainage tube. If there is any question as to the patient's not passing the full amount of urine, time should not be lost in giving salt solution by the bowel and, if need be, by hypodermoclysis and, if the stomach is retentive, caffein, spartein and calomel by the mouth. When there is persistent nausea I regard lavage superior to medication. Any other symptoms arising during convalescence are to be met on general principles.

THE CAUSES OF FAILURE IN TENDON GRAFTING.

BY DAVID SILVER, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

In the twenty-five years that have elapsed since its introduction, the operation of tendon grafting has passed through the successive stages characteristic of new operations. Rising gradually from early obscurity, it finally gained general attention, and was then eagerly heralded as a cure for all forms and degrees of paralysis; thus its overzealous use brought upon it criticism that it did not deserve. Now it is entering upon the final stage,—that in which its real worth, as an operative procedure of the greatest value in properly selected cases and in experienced hands, is appreciated.

Brilliant permanent results in tendon grafting have been numerous, but, on the other hand, lack of any especial improvement has been by no means infrequent, even in experienced hands, and occasionally overcorrection of the deforming tendency has resulted, giving rise to a condition worse than the original.[13] Much harm has doubtless resulted from the idea that this is a simple operation. It can be called simple only in that danger to life or of injury to important structures is slight. In all other respects it is difficult, requiring as it does a knowledge of neurological, mechanical, and operative principles, and it should be undertaken only by those who can give it especial study.

In recent years so much has been done, both clinically and experimentally, to place the operation upon a firmer basis, that a study of the causes of failure in the light of our present knowledge may prove of value. This may be conveniently divided into (1) selection of unsuitable cases, (2) inaccurate determination of the extent and degree of the paralysis, (3) defective plan of operation, (4) imperfect operative technic, (5) insufficient after treatment.

SELECTION OF UNSUITABLE CASES.

It may be stated in general that tendon grafting is applicable to cases of permanent paralysis in which enough muscular tissue remains to promise sufficient control after balance is restored; in certain cases it may also be used to obtain tendinous fixation where the paralysis is too severe to permit of restoration of function.

1. *The paralysis must not be progressive.* Diseases in which the paralysis grows progressively worse are obviously improper ones for grafting, since no lasting improvement can be expected. Yet Oppenheim[15] had seen three such cases in which grafting had been performed, naturally without benefit; the first was one of the peroneal type of progressive muscular atrophy, the second, one of the spinal form of the same disease, and the third was a case of compression myelitis from malignant disease of the vertebræ. He insists strongly that any one undertaking a tendon transplantation should determine beforehand that he is not dealing with a progressive condition.

2. *The paralysis must have reached its final, or permanent, stage.* As long as there is a possibility of continued improvement by nonoperative measures, grafting should not be considered. In acute anterior poliomyelitis, which furnishes the majority of the cases, and which will be understood as referred to in the remainder of this paper, recovery continues for a long time. A year is usually given as the limit of improvement and, hence, as the time after which operation may be done. I have seen recovery still going on, however, late in the second year and therefore agree with Whitman[24] when he states that, in general, a period of two years at least should intervene between the onset of the paralysis and the operation.

3. *The muscular power remaining should be sufficient to justify operation.* One is sometimes requested, and even by physicians who should understand the nature of the procedure, to operate in cases of practically complete paralysis. In such, tendinous fixation is all that can be expected and usually arthrodesis is indicated. Grafting may be justifiable, however, even where there is not enough power to restore muscular balance; as, for example, where all the power available is used to obtain plantar flexion, the most important movement of the foot.

4. *The existence of deformity is a contraindication to immediate operation.* Since no case is suitable in which all the improvement possible by nonoperative measures has not yet been obtained, it follows that deformity must first be overcorrected a sufficient time to allow muscular adaptation to take place (Wilson[25], Codavilla[3], and others). As is well known we are not always able to distinguish exactly between muscles which are paralyzed and those which have atrophied from disuse, especially when the inactivity has persisted for a long time. How long the interval between the correction of the deformity and the operation of transplantation should be, is a question of the greatest importance, for upon it largely depends the success of the operation. The interval given by different writers varies from eight days (Koch[9]) to one to two months (Lange[11]); slight degrees of deformity are not corrected by many until the time of the transplantation. Even two months is, in my opinion, too short. The long time required for muscles to become adapted to the new position after the forcible correction of deformity due to other causes is well recognized. Take the most common example, congenital

clubfoot; even after the most favorable result by forcible correction, fasciotomy, and tenotomy, we do not obtain adjustment to the new position for from six months to a year. The condition in paralytic clubfoot is similar and it is hard to understand why we should expect a shorter period of fixation to be sufficient. In a recent case of wrist drop of cerebral origin, which I treated by overcorrection alone, six months were required before the patient was able to maintain the hand in twenty to thirty degrees of dorsal flexion. Tubby[27], in commenting upon the treatment of deformity from various causes by this method of overcorrection, places the time required at from six to fifteen months. The beneficial effects of maintaining overcorrection a sufficient length of time are often astonishing. In calling attention to the importance of first absolutely curing the deformity, Lorenz[13] says, when this is done, it often happens that the relatives are so pleased with the result that they do not see the need of the transplantation, and that usually he has to admit they are right. The explanation of this lies, of course, in the fact that recovery of the nerve cells, which progresses slowly, reaches its highest point after the development of the deformity and the paralyzed muscles are thus placed at such a mechanical disadvantage that they are not able to regain their tone until put under favorable conditions by the overcorrection of the malposition. I wish, therefore, to especially emphasize the importance of increasing the interval between the time of the overcorrection of the deformity and the subsequent transplantation, believing that, if this be done, in many cases the operation will be unnecessary, while in those in which it is required the percentage of successful results will be much higher. To state what this interval should be, is, I believe, impossible, since it will vary with the duration and severity of the paralysis; six months would, however, seem a reasonable lower limit. There can hardly be any sound objection to increasing the interval, since, in the great majority of the cases, we are dealing with children for whom time has no value when compared with even a slight increased improvement. The correction of deformity at a preliminary sitting is also indicated as it lessens the chances of infection by diminishing traumatism and permits of transplantation under sufficient tension (Vulpius[28]), the need for which will be referred to later.

INACCURATE DETERMINATION OF THE EXTENT AND DEGREE OF THE PARALYSIS.

A successful result in tendon grafting obviously depends primarily upon an exact diagnosis of the distribution of the paralysis, and yet, as is well known, this may be extremely difficult to make, especially in young children. It is by no means easy to determine in the case of a given muscle whether the paralysis is complete or whether portions remain which are capable of carrying out their function. Even the electrical examination, which, in experienced hands, would seem to offer the most definite results, often adds little or nothing to the knowledge gained from a careful study of the active movements. Noble Smith[20] says that his experiments have shown him that the so-called reaction of degeneration does not prove that the muscles giving such reaction are absolutely paralyzed. And Tubby[26] also states that even when muscles give the reaction we have no means, so far as he knows, of measuring exactly what is the extent of the degeneration, whether it is entirely distributed throughout the muscle, or is in patches, or to what extent it has proceeded. Upon this point the recent work of Koch[9], who investigated the condition of the paralyzed muscle in anterior poliomyelitis, throws important light. He found that wherever there had been a diffuse degeneration of the muscle fibers, there occurred at the same time a marked regeneration of new fibers, which took place with or without direct connection with the old fibers. In this regeneration of new muscular tissue he sees the explanation of the clinical experience that in many cases paralyzed muscles recover. He concludes that when contractile substance is still present or regeneration has taken place, the muscle is only partially paralyzed and should functionate in proportion to the amount of the retained or regenerated fibers; that this is not the case is due to the loss of the elastic tension and the normal muscle tone, to restore which it is necessary to shorten the tendon or transplant under tension. The truth of his work is borne out by the clinical experience that shortening of a tendon is frequently followed by a return of active motion. In a later paper the same author[10] reports an instructive example of this; having frequently combined shortening of the quadriceps with transplantation of the hamstrings, he was led to try the effect of shortening alone and met with entire success. Thus it seems that one mistake of the past has been the failure to make use of all the power remaining in the paralyzed muscles and the indications seem to point clearly to the advisability of the more extended use of shortening of the tendons, since this can be done so as not to interfere with subsequent transplantation, should such be necessary.

DEFECTIVE PLAN OF OPERATION.

1. *Lack of simplicity in the plan of operation.* The tendency to-day is toward greater simplicity. In the earlier days of the operation very complicated combinations were made, the idea being to supply each paralyzed muscle with a portion of a healthy one; thus the calf muscle might be made at the same time to furnish material for pronators, supinators, and possibly also for flexors. But as Schanz[17] has well said, "If one carries out such complicated plans, one obtains tendinous fixation, and this may be secured much easier." Hoffa also warns against complicated operations because, in case of failure, the patient may be made considerably worse, and Tilanus[22] says that experience in a large number of cases has brought him to the conclusion that one should not transplant more than two tendons at the same time, as one may easily go too far.

2. *Failure to appreciate the relative value of the muscles.* In planning the operation one must have a clear understanding of the relative importance of the different functions. When a considerable portion of the muscular tissue of a part is paralyzed, it is clearly unwise to attempt to restore all the lost functions; the better course certainly is to so distribute the remaining power as to supply the important functions as fully as possible and to disregard unimportant ones. In the foot, movement of the toes, as Lange[11] has pointed out, is entirely unimportant in shoe-wearers, and hence the muscles carrying out this function may be taken to supply those which are more important, provided only that all the muscles that move the toes are taken; one alone must not be left since contractures may thus result. Similarly in the hand, in the case of severe paralysis, the same author advises first sacrificing radial and ulnar abduction, then, if necessary, flexion and extension of the wrist, in order to restore the use of the thumb and the fingers. Due regard must also be had to the relative strength of the muscles. This is well illustrated in the attempt to entirely replace the calf muscles by the peroneals, the latter, according to Fick (see table in Whitman's Orthopedic Surgery), possessing only one eleventh the strength of the former. Tubby[26] reports that in his experience of six cases in which he has done this operation, "the result is that the patients can extend and dorsiflex the foot when the weight is off the ground, but they have not, except in one instance, been able to raise the body on the toes of the affected

foot; so that the transplanted peronei merely become additional posterior ligaments of the ankle joint in steadying the foot in standing." Out of five similar cases reported by Dane and Townsend[4], the result in four was distinctly poor and in one only fair. Another point of importance in this connection is the relation between the strength of the muscle and the length of its excursion, to which attention has been called by Auroletti[2]. He states that the soleus, a penniform muscle, which may be separated from the gastrocnemius, is better suited for replacing muscles of more power than length of excursion, while the gastrocnemius, on account of its longer excursion, is adapted for replacing such muscles as the dorsal flexors.

3. *Choice of wrong method for obtaining power.* In some cases tendon transplantation or tendon shortening is performed with the object of securing tendinous fixation only, as when it is combined with arthrodesis (Whitman[24]), or in the so-called "tenodesis" (Codavilla-Reiner[16]), in which the proximal end of the tendon is fastened to the bone so as to act as a new ligament. With these exceptions success in tendon grafting must be measured by the ability of the patient to carry out independent function with the transplanted muscle; for example, after grafting for talipes valgus the patient should be able to adduct the foot. If function can not be performed independently, then the transplanted tendon simply acts as an "additional ligament" and the result is incomplete, however satisfactory the position of the foot may be. It is by no means possible to obtain independent function in all cases, nor indeed is it wise to attempt it, but the distinction between the two purposes of the operation must be clearly drawn if we expect tendon transplantation to reach its highest development. Without any question much of the improvement in the past has been due to the action of transplanted muscles as additional ligaments and not as muscles, and many of the relapses may safely be attributed to the subsequent stretching of such muscles. If progress is to be made, reports of cases must state whether the improvement obtained is the result of better fixation solely or of improved function; and if the latter, the number of degrees of motion obtained and an estimate of the strength should be given. To simply report the result as "fair," "good," or "excellent" is unscientific. Whether independent function is secured or not depends largely upon the manner in which the power is taken, and this may be done in a number of different ways. (1) The side of the healthy tendon may be simply sutured to the side of the paralyzed one. (2) A portion of the healthy tendon may be split off, the division being carried only a short distance into the tendon, or (3) the division may be carried well up into the muscular tissue. (4) The entire muscle may be taken, the tendon being completely divided. The first two methods, side-to-side suture and partial splitting, can not give independent function; moreover, they are open to the added objection that they do not permit of subsequent adaptation of the transplanted portion; if yielding occurs at the point of union or if stretching of the paralyzed tendon below this point takes place, the good effect of the operation is lost. Hence the use of those two methods is very restricted and can not be recommended, except as adjuncts to other methods. Splitting of the tendon well up into the muscle, however, permits of subsequent adaptation, but, when the muscle has no natural division into distinct portions, it is certainly expecting a great deal of the brain to require it to learn the separate use of two parts of the same muscle belly; while the possibility of this can not be denied, that it occurs with anything like regularity may safely be questioned. The natural division

of the muscle into distinct portions, as, for example, in the case of the gastrocnemius, offers better facilities for splitting and greater possibilities for the acquisition of separate action. The greatest chance for the restoration of independent function, however, is naturally obtained by transplanting the entire tendon; but, when this is done, it will very frequently be found necessary to disregard the natural insertions of the tendons and to follow the plan suggested by Lange of attaching the tendon to the periosteum at the most advantageous point. Lange's method is a distinct advance in tenoplasty and is being more widely used to-day than ever; the more severe the paralysis, the more strongly is it indicated.

IMPERFECT OPERATIVE TECHNIC.

1. *Transplantation of muscle under insufficient tension.* More emphasis is laid to-day upon the effect of insufficient tension as a cause of failure than upon any other one thing. Almost all writers mention it. Lange[12] says that his results have been better from year to year, the more he has learned to transplant the muscle under higher tension. Failure to obtain sufficient tension may be due (1) to failure to overcorrect deformity, (2) to insufficient hold of the suture on the tendon, and (3) possibly also to insufficient muscular relaxation at the time of placing the suture. A sufficient degree of tension may be lost subsequently through yielding at the point of the implantation, or, where tendon is grafted into tendon, through stretching of the distal portion of the receiving tendon; hence, Lange's claim for the superiority of periosteal implantation.

2. *Inefficient method of suture.* There can be no question that failure of the operation through insufficient hold of the suture is fairly common. The tendon bundles are not united at all firmly, and readily yield to a comparatively moderate pull in the direction of the fibers. On account of the high tension under which approximation must be maintained, the constant strain which the suture must withstand is great; moreover, there is an additional intermittent strain from involuntary muscular contractions; such, for example, as may occur during recovery from an anesthetic. Therefore, especial care is necessary in tendon grafting to secure a firm hold on the tendon. In securing this hold there need be no fear of necrosis of the tendon, as the writer's experiments on rabbits seem to show that there is practically no danger of yielding through necrosis from overtight sutures.[19] Of all the many methods suggested, the interweaving suture of Lange offers the greatest strength. Additional security may be obtained by carrying the tendon through a slit in the receiving tendon (Goldthwaite), or, in the case of periosteal implantation, by passing it through a canal drilled in the bone (Muller[14]).

3. *Insufficient strength of union.* The strength of the new tendon tissue formed at the point of the implantation has been shown to be diminished by the occurrence of infection (Hoffa[8]), and by hemorrhage (Adams[1], Hoffa[8], and others). In order to prevent hemorrhage the majority of writers recommend the use of the Esmarch bandage; it has seemed to me, however, that hemorrhage can be controlled better when the bandage is not used. Experimental work shows that the strength of the union depends at first upon the formation of a good callus, just as is the case after tenotomy, and that for this purpose the preservation of the sheath is of the greatest importance. The sheath should be drawn together so as to enclose as far as possible the point of implantation. A case in which the tendon was torn from its new insertion through a fall, occurring three months after the operation, is reported by Stern.[21]

4. *Formation of adhesions.* Adhesions are always present to a greater or less degree in every case. Their influence is nat-

urally greater where the incision has been made in firm, unyielding tissue, as, for example, in the hand or wrist. The effect of sepsis on adhesions need only be mentioned: the same care as regards head covering, face mask, gloves and other details is to be demanded in these cases as in abdominal work. The chances of infection are reduced by boiling the silk used in the tendon suture in a solution of corrosive sublimate 1-1000. In order to prevent adhesions to the skin, the skin incision may be made to one side of the point of transplantation (Vulpius[28]), or a curved incision may be used (Tilanus[22]). Separate suture of the fascia, although not thought necessary by many, does not require much time and is to be advised. The introduction of drainage for twenty-four to forty-eight hours, as recommended by Lange[11], not only aids in diminishing the chances of infection but also, by removing hemorrhage and exudation, which would otherwise have to be absorbed, decreases the number of adhesions. A few strands of silkworm gut serve the purpose well and there is no real objection to their use. Failure to destroy the synovial sheath of the transplanted tendon may permit of the formation of a new tendon, just as occurs after tenotomy, and so give the muscle a double pull, thus absorbing part of its power (Goldthwaite[6]).

INSUFFICIENT AFTER TREATMENT.

The period of fixation generally recommended is from six to eight weeks, except in the case of the arm where Lange[11] recommends only three to four weeks on account of the danger of slight stiffness. In operations on the leg the greater part of this time should be spent in bed (Vulpius[28], Lange[11]). Earlier attempts at the use of the part are apt to be followed by stretching of the young tissue, as Seggel[18] has shown that this does not reach a definite condition until after the fortieth day.

The removal of the cast ushers in a period of especial risk. As great care is demanded at this time as was necessary during any previous part of the treatment. Relapse into the old malposition must be guarded against, and the tendency to the assumption of a new faulty position prevented; where restoration of function is the object sought, the transplanted muscle must be reëducated and gradually developed. Many of the failures must be laid to the lack of proper care during this period. Insufficient protection to the foot during early use may lead to stretching of the tendon, and excessive use may give rise to atrophy instead of to the wished for hypertrophy. The intelligent coöperation of the patient is necessary to success, hence, the objection to operating on very young children. The point of greatest possible improvement is reached only after months of continued attention to every detail; to discontinue treatment after a few months is to invite relapse. Lange[11] says that in order to obtain a good permanent result it is necessary to have the patient present himself every two months during the first two years. Freiberg[5] states the total improvement is sometimes not gained until a period of as much as two years has expired. Townsend[23] also, in speaking of the arm, says that the after treatment must be kept up for not only one year but for several years, especially where we expect function.

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THE SURGICAL TREATMENT OF CHRONIC COLITIS.

BY WILLIAM M. BEACH, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

By the term chronic colitis I wish to include the various forms and stages of inflammation of the colon, such as catarrhal and ulcerative mucosa, as well as chronic adhesions, typhlitis and perityphlitis. In these conditions the concomitant symptoms of colitis, namely, pain, constipation, and mucous discharges, are more or less constant factors. It must be admitted that a large number of these cases can not be cured by internal medication or even by local treatment. A large personal experience with these methods has convinced the writer that something more direct and radical must be adopted to effect a cure.

We are in the twilight of success by resorting to surgical measures according to the caption of this communication. In the last four years, we may reckon as pioneers in this work, Weir, Meyer, Tuttle and Gant, who have reported from four to fourteen cases each. The writer's experience is limited to one case only, for the reason that he wished further observation through other operators before recommending it as the appropriate procedure in several of his cases. I refer particularly to appendicostomy. It has been frequently observed how an appendectomy and simultaneously the release of adhesion of the caput coli clear up obstinate symptoms ascribed to colitis, but these procedures, though valuable to a degree, fail in many instances to relieve the diseased colon. Such cases would indicate solutions of continuity in various portions of the intestinal tract from the caput coli to the anus, with points of predilection in the flexures, sigmoid, and rectum. It is such cases only that the limits of this paper will allow us to discuss.

Mucorrhea due to stricture is quickly relieved by a colostomy above the offending area, and such an operation is sufficient in multiple stricture, whereas in simple annular stricture the diseased point may be removed. Volvulus invaginations and angulations must be reckoned with as causal factors of colitis which may be corrected by surgical measures; indeed, direct irrigation through an opening in the gut will generally suffice to remove these causes. Of course, malignant diseases are not included in this consideration.

Pursuant to these general considerations, our subject admits of the following paragraphs:—

1. *Indications for Surgical Treatment of Chronic Colitis.* At the meeting of this society in 1903, the writer presented a paper advocating a dietary, supplemented by colon flushing and various other local measures to control the disease; but a continuous study of these obstinate cases, some being cured, others only benefited, has provoked, in those cases which are persistent and obstinate, the radical procedure which is herewith presented. Such we find in patients suffering from amebic dysentery, colon adhesions following catarrhal appendicitis and gynecologic operations, syphilis and primary tuberculosis of the colon. It is obvious that less radical measures should be first exhausted to determine the limitations of a course in diet and local treatment. Ulcers treated through the proctoscope or sigmoidoscope may be successfully combated, but such an expression of disease very frequently is an index of pathologic states higher up the colon, beyond the reach of these instruments. Appendicostomy comes to our aid. Amebic and chronic dysentery or diarrhea, atrophic or hypertrophic catarrh, with alternating diarrhea and constipation, are fitting cases for appendicostomy. These patients complain of periodic attacks, for it is well known that subsidence of symptoms occurs, lasting over an interval of a few weeks to several months. The ulcer is the culmination of the inflammatory process, and is usually found in the rectum, flexures and cecum; plastic exudate may result in narrowing of sections of the colon or rectum. The local symptoms consist of large quantities of mucus and blood, accompanied by tenesmus. Chronic hypertrophic catarrh produces shreddy cast, tinged with blood, and irregular stools. Inspection reveals the mucosa denuded of its epithelium, red and inflamed, and the touch of an instrument evokes pain in the back according to the nerve center disturbed. For the same reason the symptoms of proctocolitis are referable to the uterus, ovaries, mouth of urethra, stomach, etc. Rational symptoms occur through the absorption of ptomains from retained gas and feces, which result in severe and constant headaches (especially postcranial and cervical), nausea, anorexia, fermentations, pains in back and vague pelvic and abdominal discomforts; the patient is anemic, tires easily and is greatly depressed; extremities are cold, pulse is weak, indicating great nervous exhaustion; in short, he becomes a confirmed neurasthenic.

Having given thorough trial of local and general treatment without satisfactory abatement of symptoms, we decide upon the following:—

2. *Appendicostomy Merits Trial.* The term signifies an opening in the appendix through which direct lavage of the colon can be maintained. The measure has the additional advantage of breaking up localized adhesions and final obliteration of the appendix. If the appendix be found too short or nonpatulous, it will be necessary to do a cecostomy which fulfills the exigency of the case but has the disadvantage, usual with an ordinary colostomy, of allowing the contents to leak; this, however, can be overcome by inverting the gut wall, thus forming a valve. From the experience of surgeons in this matter, cecal colostomy is rarely necessary. An opening at the head of the colon also gives the advantage of clearing the bowel of gases, kinks, and a direct method of cleansing. Rectal and sigmoid ulcers, of whatever origin, yield much more readily to direct drainage, and it is less painful than treating through long tubes with doubtful success.

I do not wish to teach the abandonment of the protoscope, but, like all other instruments, it has its limitations in obstinate cases.

Tuttle, in an article published in the

Journal of the American Medical Association, August 11, 1906, tabulates twenty operators as having performed appendicostomy, varying from one to fourteen cases each, the total number of cases being seventy-seven. Among the surgeons are: Weir, three; Meyer, five; Curl, eleven; Keitley, three; Major Arthur, nine; Gant, nine; Maunsell, two; and Tuttle, fourteen.

The same author schedules the following conditions for the operation: amebic colitis, forty-five; mucous colitis, fifteen; syphilitic ulceration of colon, four; tubercular ulceration of colon, four; multiple papillomata, two; intussusception, one; volvulus, one; chronic constipation, two; carcinoma of transverse colon, one; hemorrhagic colitis, one.

3. *Technic of the Operation.* The incision should be made as in appendicostomy, about an inch and a half inside the right anterior superior spinous process. The opening should vary in length from two to three inches according to the thickness of the belly wall and the extent of adhesions. The line of incision should be at right angles to a line connecting the right spinous process and umbilicus. Any adhesions should be broken up and smeared with sterile olive oil, in order to prevent, as far as possible, the reëstablishment of adhesions. The appendix is then located and lifted through the wound, and if found to be patulous (which can be determined for the most part by rolling between the thumb and fingers), it is stripped of its mesentery. The caput coli is then sutured on four corners to the peritoneum at the lower angle of the wound, at which angle the appendix is also anchored to the layer of the abdominal wall. When this is done, each layer of the wall is sutured separately; when the wound is closed, the appendix appears outside the wall and should be wrapped in gutta percha tissue and left for twenty-four or forty-eight hours. Having destroyed the blood supply, there will likely be some sloughing; in which event, cut it off to about a half inch from the abdomen. The caliber may be enlarged by a sound or spreading forceps, so that a soft rubber catheter may be inserted to four or five inches in the colon and tied there; through this catheter solutions are readily conveyed.

This leads us to the consideration of the fourth paragraph:—

4. *Treatment Following Appendicostomy.* Solutions to be used in direct irrigation are determined according to the nature of the lesions; moreover, the frequency of application and temperature of the solution must be reckoned with for effective results. Patients having ten to twenty-four stools daily, and almost constant tenesmus, are known to be relieved in two days' time by simple irrigation twice daily. Again, in tuberculous or syphilitic ulcers, a longer period must elapse before a beneficial effect is noted. Amebic dysentery heads the list of diseases of the colon cured by this method. We are taught by Tuttle that ice water irrigation should be practiced if the amebæ are present; when all trace of the bacillus is gone, normal saline solutions varying from 65 to 112 degrees may be used. These in turn may be succeeded by various astringent antiseptic flushes, such as quinin, boric acid, krameria, hydrastis canadensis, etc. Most operators use one irrigation daily, but in my case twice daily was the order for the first week, then once daily, or less frequently, according to the number of stools; if the latter numbered from one to three daily, daily or alternate daily flushings suffice. Usually a week's time will terminate with marked improvement and, according to some surgeons, with apparent cure.

The question of the time to close the opening, of course, depends upon the cure of the colitis or degree of improvement. In no case is it wise to be in a hurry, for little or no discomfort is experienced by the opening, since there is little or no leakage. In tubercular and amebic cases, it may remain open for a year or more. The closure is a comparatively easy matter, either by dissection and suture or applying a caustic allowing it to heal gradually.

While my experience is limited as to my own cases, I have had the opportunity of seeing those of other surgeons, all of which satisfied me of the great value of this method to cure these maladies of the colon, hitherto having been a vexing problem to solve. Unwittingly, many surgeons have cured colitis by appendicectomy, but they were cases limited to the head of the gut.

Appendicostomy is the "open sesame" to the successful management of extensive lesions in the large bowel, and I believe it will become in the near future a commoner practice among surgeons.

DISCUSSION.

Dr. George Erety Shoemaker, Philadelphia: This is a very interesting subject, and the question arises whether the opening into the appendix and the drainage of the colon is really the source of the improvement, or whether it is the removal of a chronic irritating focus which has been accomplished incidentally in the operation. There is no doubt that the presence of an abnormally placed, adherent, chronically inflamed appendix, with a degeneration of the lining membrane, will continue the chronic colitis in some instances. It has been for years recognized in certain cases of chronic colitis, which are sometimes so distinctly associated with nervous symptoms, that the removal of the appendix and the cleaning up of adhesion areas, will immediately greatly improve and will ultimately cure the condition. In a paper on chronic irritability of the colon as a symptom of appendicitis which appeared in the *Annals of Surgery* eight years ago, I brought forward some cases illustrating that, and it seems to me that this operation of appendectomy may do the same thing, and that to this is due, in some instances at least, the resulting improvement. The operation as described by Dr. Beach, by creating a new point of adhesion for the caput coli and by leaving a mucous channel to the surface or nearly to the surface, and probably weakening the abdominal wall at this point, is not without objection. Chronic dysentery with ulceration of the stubborn type may, however, require operation in the way that Dr. Beach has so ably presented, and the procedure probably, therefore, has a limited field in which it will prove very useful.

Dr. J. C. O'Day, Oil City: Last June there appeared an article by Dr. Laplace, on the treatment of epilepsy by this procedure. His scheme was to remove any toxic material from the large bowel, and which he believed to figure in some way in the cause of the epileptic seizures. While talking with the Doctor last night, he told me he had the record of three cases which he believed cured. In all of them, he explained, three years had elapsed since an attack had occurred. He is now endeavoring to classify in groups certain symptoms of this disease that we may recognize what particular cases are adapted to this method of treatment.

After reading the article last June, it occurred to me that there might be another field of usefulness for the operation in the treatment of typhoid fever. You all know that absorption and secretion are about plus in the small bowel, while in the colon absorption is far in excess. Then you will remember the difference in the anatomical construction by which the colon is gathered into saccules, each of which delays the elimination of the debris coming down from the seat of the disease. Of course, it does seem that abnormal fixation of any organ would produce untoward effects, but we are choosing between two evils, and decide by choosing the lesser of the two. In the treatment of typhoid fever by injections, the hospitals of this country for a time were carrying out the method of Leibermeister; instead, not a few employed a large irrigating bag to which a rectal tube was attached. Cold water was allowed to gravitate from the bag into the bowel for a time, then lowering it the fluid would return to the bag, and without having to go through the process of inserting the tube again the flushing could be continued until the temperature was reduced. But if there should exist a point of irritation along the mucosa of the large bowel, it would be difficult to induce water by it, the contact would excite spasm, expelling all below. In such conditions the advantage of going around this back way is apparent.

Dr. Otto C. Gaub, Pittsburg: One word in regard to the use of the appendix as an avenue of drainage of the colon in the treatment of typhoid fever, as mentioned by Dr. O'Day. This procedure originated more than a year ago, with Dr. Ewart, an English physician, who proposed to drain the ileum in typhoid fever by appendicostomy. The position taken was that not only could the diseased area be treated locally, but the germs were destroyed *in situ.*

Aside from the treatment of the disease, this procedure was considered very important from the standpoint of sanitation, but it seems to me to be a pretty heroic measure for the therapy of typhoid fever if there are no complications. Whether it is justifiable or not, I do not know.

In private practice, the mortality from typhoid fever is very low if no complications supervene. In hospital practice, the same low mortality is obtained if we exclude that resulting from the complications, perforation or hemorrhage.

When hemorrhage occurs, we are dealing with different factors; we have a collection of blood acting as a foreign body in a mucous-lined canal, which foreign body excites the muscular wall of the ileum to contract, thereby defeating the object which the physician hopes to attain; that is, physiological rest.

The recurring active peristalsis tends to continue the bleeding, but if the contents of the lower part of the ileum could be drained through a catheter which has been introduced through the iliocecal valve, utilizing the appendix after the operation of appendicostomy as a channel, we may hope to attain physiological rest for the intestinal tract. In this way, we may probably find a field of usefulness for this operation, but, in the treatment of simple uncomplicated typhoid fever, it seems to me to be highly irrational.

Dr. Beach, closing: Certain enthusiasts have suggested appendicostomy as a rational procedure in typhoid fever but that remains *sub judice.* I have no doubt that under proper limitations it may prove valuable, especially in those cases where many adhesions are formed about the caput coli. The danger of sloughing of the appendix is of small degree since care is taken that the blood supply is not cut off. It is advised that it be opened during the operation, but I believe it better to wait at least twenty-four hours.

A PECULIAR TROPHIC AFFECTION OF THE SKIN IN A NEUROTIC SUBJECT.

BY RUDOLPH MYERS, M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

I want to report a case to this society which to me is one of an exceedingly interesting character. It is interesting not only because of its rarity (it being my first case of the kind in a practice of forty-three years) but for its singular development.

My patient, Miss G., a dressmaker, is neurotic, and was at one time addicted to the use of morphin. She menstruates every two weeks, at which time she suffers from ovarian neuralgia. Ovaries are always tender.

On December 11, she heard some one trying to break into the house and became very much frightened and nervous. Three days later she complained of very severe pain between the second and third joints of the third finger on her left hand. I saw her the following evening and found, where the pain had been, a dark sunken spot three fourths of an inch long by a half inch wide. There was no swelling around the diseased area, nor was there any constitutional disturbance. Urine examination showed specific gravity 1.028, acid, no albumin, no sugar. Her appetite was good and she worked right along. As the days passed, the spot on the finger became dry and hard. On the tenth day, although there was no line of demarcation, I removed the necrotic mass and found it much like dried beef.

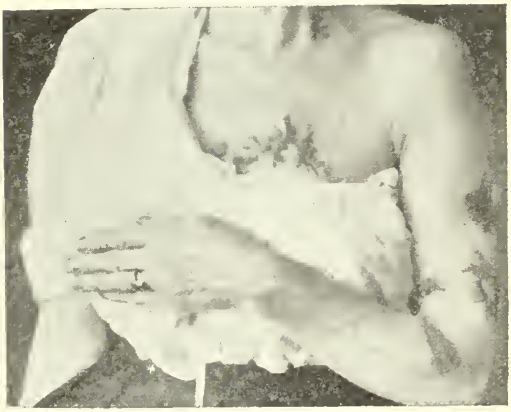
On December 21, a spot three lines in diameter formed near the knuckle between the first and second joints. On December 28, another one about the same size developed near this second one. Seven days later one formed on the back of the hand, just back of the first one, an inch in diameter, with an irregular outline. Thus, every succeeding seventh day a new one developed on the hand and up the arm, until she had eleven. Then one developed every two weeks for three turns, the last one coming on the upper part of the breast.

On May 3, she poured coal oil on hot dark coals in the cook stove, to which she applied a match. An explosion followed, blowing off the top of the stove. You can better imagine her nervous condition at that time than I can tell you. The following Thursday, between nine and ten o'clock a new spot, an inch and a half long and an inch wide, appeared on the inside of the arm near the elbow. After this, every Thursday morning, between nine and ten o'clock, a new one developed until she had had six, the last one being on the breast. There was no evidence whatever of any change in the extremities as manifested in symmetrical gangrene. She, however, had the pigmentatious spots on her lower limbs and the lower part of her body as found in some cases of Raynaud's gangrene.

The first symptom in the development of the gangrenous spots was a slight burning pain. In less than half an hour I was able to trace the outline of the effected part by the apparently sunken and bleached condition, the area having lost the rose tint of the healthy skin and appearing much like a piece of tripe. The constriction of the arterioles was so complete that not a particle of red blood entered the diseased area. By the next morning I found the diseased spot dark and gangrenous.

The above history was characteristic of all the attacks except the first and eleventh. The latter, located on the back of the arm near the elbow, began with the burning pain but instead of bleaching as the others did, it became dark and congested, weeping bloody serum. The arm became swollen and painful, producing considerable constitutional disturbance. The line of demarcation was slow in forming. On removing the dead mass it broke up like old rotten liver. Evidently the greater constriction was in the veins instead of in the arterioles, as in the other cases.

While the development of the attack was like Raynaud's disease, the disease differed from Raynaud's in not being symmetrical, in not effecting the extremities and in its periodicity, the attacks coming as stated, every seventh and in the latter part of first series of attacks, every fourteenth day. The second series was not only every seventh day but developed every time between nine and ten o'clock in the morning.



My treatment consisted of large doses of muriated tincture of iron, with quinin and strychnin. After painting the diseased area with fuming nitric acid, I applied a poultice of flaxseed and wild indigo.

After a few days I could lift the whole dead mass away with my dressing forceps. I then dressed the wound with a simple ointment. The sores healed by granulation, rapidly and nicely. After the appearance of the thirteenth spot I had the nurse use a small chlorid of silver electric battery. I had the patient hold the positive pole in her right hand and the nurse with a small wire electrode brushed over the diseased arm, and part of the chest. After this she had but one attack. After the sixth attack on the last series I had the nurse use the battery every day. To my gratification, there were no more attacks. I did not use the brush over the spine, as recommended by Raynaud and others.

DISCUSSION.

Dr. Alfred Gordon, Philadelphia: The case reported may be remarkable from the general standpoint, but not from the standpoint of one who has opportunities to see cases of the same order frequently. In order to understand the case properly I will sum up in a few words the facts presented by the case. The Doctor tells us that at least two attacks came on after an excitement. One attack appeared immediately after the explosion of the stove. From a scientific standpoint we are led to believe that there was a psychic influence at work. You will agree with me that we do not know of any organic disease, of any disease which really has a pathological basis, in which such occurrence should take place. We know only of one affection in which an occurrence of this character may take place after psychic shock. Then, in corroboration of what I think, I call attention to the results of Dr. Myers' treatment. He says that he applied the electrical current, when healing began to take place and continued. Is it possible that an electrical current, the true nature of which is unknown to us, should heal so rapidly gangrenous spots without the influence of cerebral action? In my opinion the condition was nothing more than hysteria. We know that hysterical patients frequently, if not always, present symptoms which are prominent in Dr. Myers' case. Hysterical edemata, ulcerations, or other trophic or vasomotor disturbances are well known. I recall a case in the service of Dr. DaCosta at the Jefferson Hospital of a woman with a large red spot on the left leg. A nervous condition was suspected. The question of operation came up. Under treatment with the static machine the condition got entirely well. It was a case of hysteria.

In regard to the hysterical stigmata, examinations should be made regarding tenderness of the spine. The visual field will in a number of cases be found to be narrowed. We may find pharyngeal and conjunctival anesthesia. These are all symptoms preëminently belonging to hysteria. In the woman with the red spot on the leg, the spot would become pale upon talking with her. In another patient with an hysterical contracture of the fingers of a year's duration I could straighten them out while talking to her. In the electrical treatment it is not the current itself that is capable of producing such a change in the symptoms, but the psychic effect.

Dr. John G. Burke, Pittsburg: I would like to ask Dr. Myers whether he had carefully eliminated the fact that the woman was not producing the lesion by an acid. The fact that the lesions are all in regions easily reached by the right hand, their sudden onset, and their differing from the ordinary lesions of the skin, suggest to me that they were produced artificially.

Dr. Myers, closing: The lesion was not produced by the patient. She had an attendant with her all the time. I watched the case during the development of one of the gangrenous spots and am positive that it was not traumatic. There was a gradual constriction of the arterioles until the appearance was like that of tripe.

These gangrenous spots healed in less than a week. After the electricity was applied, they ceased to form. There is no question about the case being hysterical. The question is whether or not there was some Raynaud's disease present. It seemed to be a case of hysteria and Raynaud's disease.

HYPERTROPHIC PULMONARY OSTEOARTHROPATHY WITH A REPORT OF TWO CASES.

BY H. R. M. LANDIS, M. D.,
Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Although a sufficiently large number of cases of hypertrophic pulmonary osteoarthropathy have now been reported to take the condition out of the class of the extremely rare diseases, still it is met infrequently enough to be of interest for of the one hundred and nine cases thus far recorded, but nine have been reported by American observers. I believe, however, that this does not, by any means, represent the true proportion. Doubtless many cases have been recognized and not reported, and probably a still larger number have gone unrecognized, or have been looked upon as cases of ordinary clubbing of the fingers.

There have been several collections of cases made in the literature; namely, Walters (St. Thomas Hospital reports, 1895), sixty-seven cases including all those of a doubtful nature; Thayer (*Philadelphia Medical Journal*, 1898), fifty-five cases; Janeway (*American Journal of the Medical Sciences*, Jan., 1903), ninety-three cases; and Wynn (*Birmingham Medical Review*, 1904), one hundred and two cases.

Since the publication of Wynn's paper, I have found references in the literature to nine additional cases, including the two now reported.

When one considers the great frequency of the various lesions supposed to produce hypertrophic pulmonary osteoarthropathy, it is surprising that the recorded cases are, after all, so few. During the past two years I have met with two well marked examples of this disease.

Case 1. T. D., female, aged thirty, a houseworker by occupation, was admitted to the White Haven Sanatorium in August, 1904, and in November, 1904, was transferred to the Phipps Institute. The mental condition of the patient is such that no reliable information is obtainable as to her family, or past medical history; she insists, however, that there is no pulmonary trouble in her family, and that prior to December, 1903, she had never had any illness. In December, 1903, she was confined to bed for two days with what seems to have been an attack of influenza.

Since that time she has been in ill health, and suffers from cough; the expectoration is scanty and whitish in color. While she has never had a distinct pulmonary hemorrhage, there have been repeated attacks of blood spitting, these attacks lasting from two to eight days. The sputum has been repeatedly examined for tubercle bacilli, but always with a negative result. In addition, the sputum has been inoculated into animals without any light being thrown on the condition.

During the last few examinations, a streptothrix has been found; whether this is the underlying cause, I am unable to state. Menstruation ceased in 1903 and did not reappear until three months ago. A few weeks after her illness in December, 1903, she noticed that the ends of the fingers were becoming enlarged; about this same time, the left leg also showed evidences of enlargement. At times she complains of a tingling sensation in the fingers, and the leg is apt to become numb after walking; distinct pain has never been present. Until within a few months she has been unable to perform any of the finer movements with the hands. Both the hands and feet sweat profusely, but are never cold.

There has been no emaciation, the temperature is usually normal; at times, however, it is subject to slight evening rises to 99 or 99.5 degrees, lasting for a few days at a time; the pulse averages 90. The urine is negative; the blood examination shows a slight degree of secondary anemia; aside from the pulmonary lesion, the other organs appear normal.

The right chest shows deficient expansion; tactile fremitus is everywhere present. The percussion note is impaired above and gradually shades into absolute dullness at the base. The breath sounds are feeble, and bronchovesicular above, and as the base is approached, become almost inaudible.

Fine crackling râles are heard on forced inspiration, particularly at the base posteriorly; left lung apparently normal. There is no displacement of the heart, the heart sounds are normal, the veins of the forearm are enormously dilated, those at the bend of the elbow being as thick as one's finger. They are readily palpated, and the walls seem thicker than normal.

The photographs show the characteristic changes in the hands and the enormously enlarged leg. (Figures 1 and 2.) The hands and forearms are symmetrically enlarged. From the following measurements, it will be seen that there is a marked difference in the lower extremities.

	December, 1905.	August, 1906.
Right thigh (lower third)	14 in.	14 in.
Left thigh (lower third)	15¾ in.	16 in.
Right knee,	14 in.	14 in.
Left knee,	17 in.	18½ in.
Right calf,	12½ in.	12½ in.
Left calf,	15 in.	15 in.

Right ankle,	9½ in.	9½ in.
Left ankle,	10¼ in.	10¼ in.
Right foot, circumference of dorsum,	10 in.	—
Left foot, circumference of dorsum,	10½ in.	—

The following report is from Dr. G. E. Pfahler:—

"X-ray examination of bones and joints shows practically no enlargement of the bones themselves. The enlargement seems to involve entirely the soft tissues. There are, however, distinct pathological changes in the bones themselves. The terminal phalanges have a distinct chestnut-burr appearance. The first joint of the thumbs, the carpal bones, and the metacarpal bones at their proximal ends show greater transparency than normal, and the normal arrangement of the cancellous tissues seems to be disturbed. In this respect, the changes resemble those found in rheumatoid arthritis.

"The adjacent surfaces of the radius and ulna show a very uneven and roughened appearance, such as occurs in a chronic periostitis and such as I have seen in syphilis. The entire inner walls of these bones have lost their normal structure, as can be seen by comparison with the outer walls, which are nearly normal. A spicule of bone growing upward and outward from the olecranon and an increased transparency of the ends of the humerus and ulna constitute the chief changes seen in the elbow. (Figure 3.) An examination of the left knee joint shows a roughening of the surface of the femur and the upper portion of the fibula, and, to a lesser extent, of the upper extremity of the tibia, similar to that of the radius and ulna, except to a lesser degree. The joint itself contains some exudate. The patella is much roughened on its anterior surface and shows three small elevations in the bone which appear to be cysts. (Figure 4.) The changes noted are similar to those seen in two other cases of this kind, which I have had the privilege to examine."

Aside from the changes in the extremities, the pulmonary lesion in this case is of great interest. Its exact nature is doubtful, and does not seem to have greatly impaired the patient's health. That it is due to fibroid changes in the lung, seems unlikely owing to the lack of shrinkage, which would certainly have taken place after two years. Tuberculosis can be ruled out I think, because of the negative results obtained from animal inoculation. The finding of streptothrix in the sputum suggests the possibility that this is the cause of the pulmonary lesion.

Case 2. J. N., male, sixty-two years of age, a piano mover by occupation, was admitted to the Philadelphia Hospital in June, 1906; family history, negative; past medical history, ordinary diseases of childhood, smallpox at fifteen, and typhoid fever at forty-seven years of age.

Present illness: He had a cold about three years ago; this left him with a slight cough, which, however, did not interfere with his work. In June, 1904, following severe exertion, he had a pulmonary hemorrhage. Dating from that time, his health has steadily deteriorated, finally necessitating his giving up work six months ago. Since the original hemorrhage, in 1904, he has had several more in addition to blood-streaked sputum. He has also suffered from attacks of pleurisy, diarrhea, and night sweats. Loss of weight has been marked; his average weight in health was 245 pounds, at present it is 160 pounds. Tubercle bacilli are present in the sputum.

The patient is a large man, the development of the osseous system being particularly great. The muscular system is greatly atrophied, and this brings into strong contrast the greatly enlarged hands and forearms; the fingers are typically clubbed, and the lower third of the forearms obviously increased in size. (Figure 5.) Aside from slight clubbing of the big toe, there are no changes in the lower extremities; none of the joints show any changes.

The duration of the changes in this case is doubtful, as the patient had never been conscious of any deformity until his attention was called to it. There is slight kyphosis present. The arteries are slightly thickened. Examination of the lungs shows advanced tuberculosis, with cavity formation. Aside from an inguinal hernia, there is no other obvious pathological lesion. The report from the *x*-ray laboratory of the Philadelphia Hospital states that the distal ends of the metacarpal bones are enlarged and that there is also some new bone formation in the lower third of the radius and ulna. (Figure 6.)

This case is a fairly well marked example of hypertrophic pulmonary osteoarthropathy, presumably of a chronic type associated with pulmonary tuberculosis. Aside from this, it has no other points of interest.

It is to Marie that we owe our attention having been called to this unique condition.

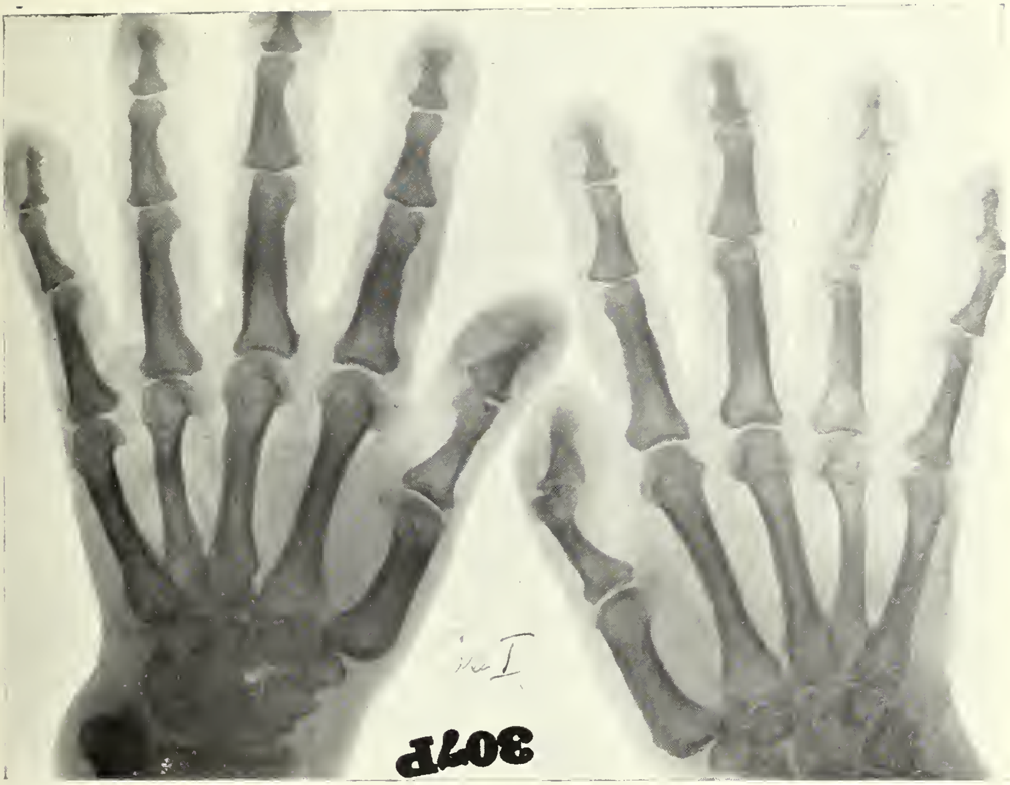


Figure I.

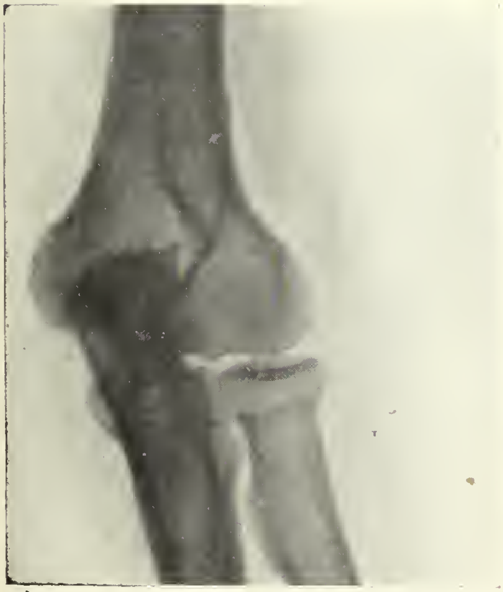


Figure III.

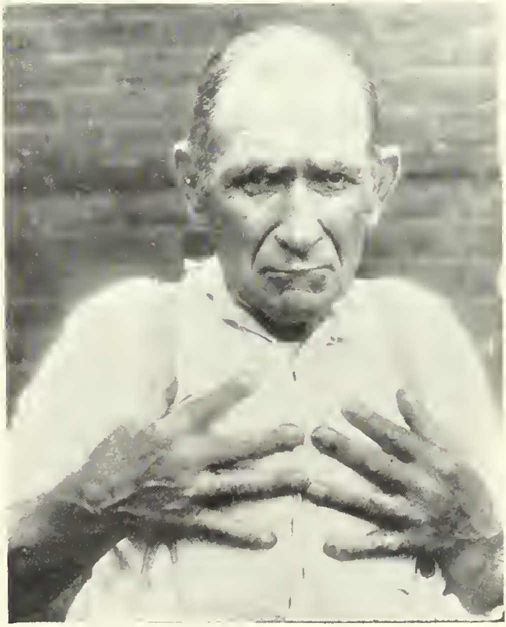


Figure V.

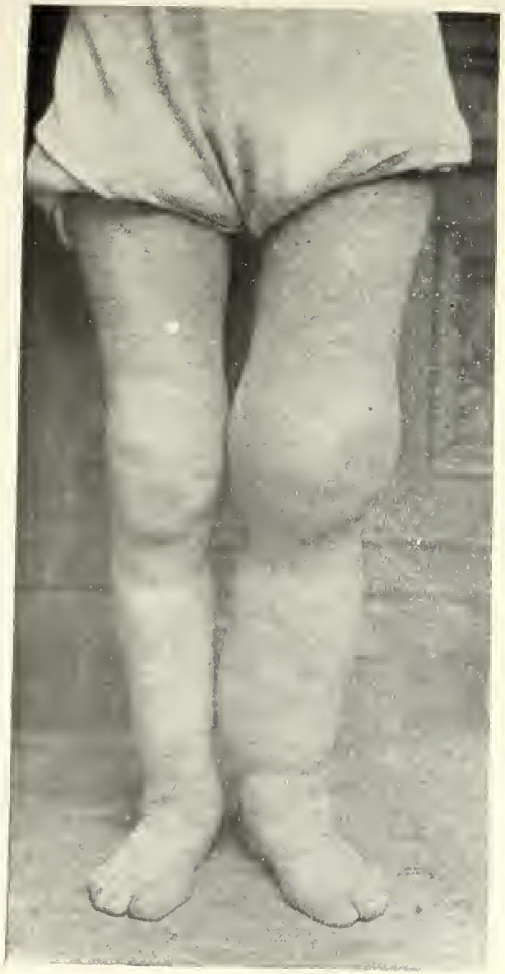


FIGURE II.

FIGURE IV.

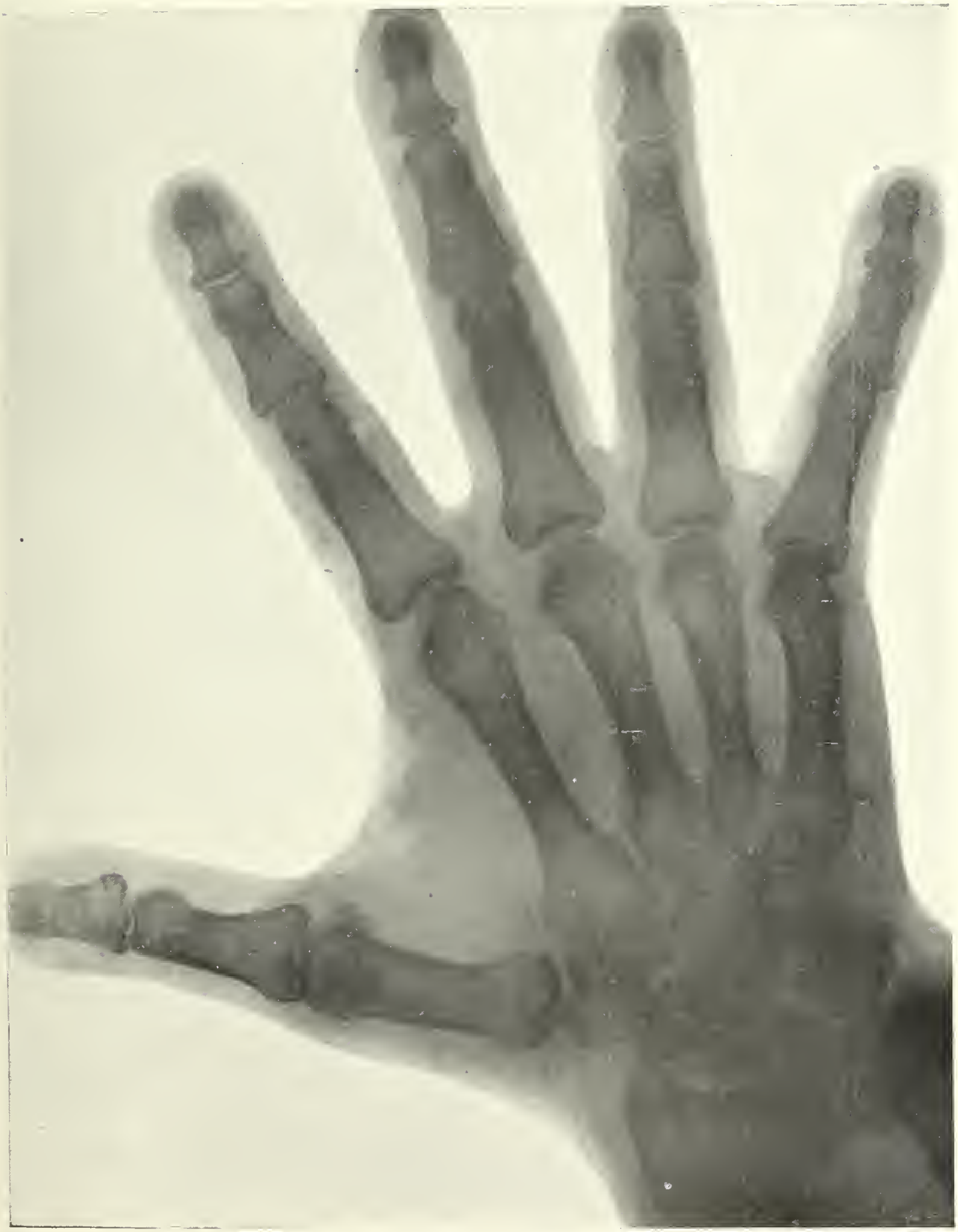


Figure VI.

In 1890, he described a group of cases having a superficial resemblance to acromegaly, but differing widely from that condition in its pathology.

Aside from the fact that hypertrophic pulmonary osteoarthropathy is now known to follow lesions in organs other than the lungs, or even to occur independently of a recognizable pathological lesion, but little has been added to our knowledge of the condition since the publication of Marie's original paper. There still remains much difference of opinion as to the appropriateness of the name, the class of cases to be considered as typical of the condition, and more particularly the underlying cause or causes which produce the characteristic changes in the bones, joints and soft tissues.

The name has been subject to various changes and modifications; secondary hypertrophic osteoarthropathy, hyperplastic osteoarthritis, secondary hyperplastic ostitis, toxigenic ossifying osteoperiostitis, tuberculous polyarthritis. Next to the original name, secondary hypertrophic osteoarthropathy has been most used. The only advantage it possesses is, that it gets over the difficulty that, in some cases, no pulmonary lesion has been found; on the other hand, it fails to cover those cases in which the disease is apparently primary.

It seems to me that Marie's original name had best be retained as the others are just as cumbersome, and do not express any more clearly the conditions present. The great majority of cases are associated with a pulmonary lesion, and are characterized by hypertrophy of the bony tissues and changes in the joints: it must be borne in mind, however, that a certain proportion of cases are not secondary, and that still others show no hypertrophy of the bony tissues as in Case 1 just reported.

Males are more frequently affected than females, the proportion being nearly eight to one. With two exceptions (once in an American negro, and once in a Hindoo), all the recorded cases have belonged to the white race. Legrain's general observation (as quoted by Walters, *loc. cit.*), that he had frequently observed the condition in the Sahara, has not been accepted.

The majority of cases occur between the ages of twenty and forty; no age period is exempt, however, as it has been noted in a child aged one year, and in six instances, in individuals over sixty years of age. The greater liability to pulmonary affections, during the third and fourth decades, doubtless influences the osteoarthropathic changes, rather than the condition of the bones. According to Wynn, ordinary clubbing is found more frequently in children. The relationship of clubbing and osteoarthropathic changes will be considered later.

In considering the morbid process which produces the osteoarthropathies, the significance of pulmonary diseases at once becomes apparent. Their association in the early cases gave to the disease its name, and, for a time, was thought to be a constant factor.

Thayer in his analysis found the condition secondary to a pulmonary lesion in forty-three out of fifty-five cases, Janeway in sixty-five out of ninety-three and Wynn in sixty-eight out of one hundred cases. That some factor other than pulmonary disease is responsible, is evident from its association with hypertrophic cirrhosis of the liver (eleven cases) and cardiac disease (three cases). In addition, the infectious diseases have seemed to be the predisposing factor, in a few instances. Wynn lays considerable stress on this hypothesis, especially with reference to influenza. Hall (*Edinburgh Medical Journal*, 1905), however, states that there does not seem to be a single recorded case in which an acute specific fever, occurring in the course of a chronic pulmonary disease, was followed by osteoarthropathy. In view of the fact that the changes in one of my cases strongly resembled syphilitic bone disease it may be well to state that a syphilitic origin of the disease was suggested by Godlee (*British Medical Journal*, 1896). This was carefully investigated by Wynn, who was able to find but one undoubted case that might be ascribed to syphilis. At least eight cases are on record in which the osteoarthropathy was primary, there being no apparent associated pathological process.

Why these conditions should be associated with osteoarthropathic changes, is not at all clear. Various hypotheses have been advanced, the most probable of which seems to be that the change is in some way dependent on toxic absorption from a suppurating point; this was Marie's idea, and also Bamberger's. The latter tried to produce the osteoarthropathy in rabbits by rectal injections of putrifying bronchial secretions, but failed. So far as I know, this is the only experimental work that has been done.

Thayer offered the explanation that the osteoarthropathic changes might be compared to amyloid degeneration in that amyloid degeneration commonly followed chronic suppuration. Furthermore amyloid changes not infrequently follow syphilis, chronic malarial cachexia, and malignant disease, in which there has been relatively little suppuration; it also occurs in a certain proportion of cases, in which no satisfactory cause can be found.

Symes Thompson (*Lancet*, 1904, p. 117) has offered an unique explanation, bearing on the toxic theory. He suggests that toxic products, whether the result of normal metabolism, or of an infective process, might be divided into two varieties, volatile and nonvolatile, the volatile toxin being eliminated by the lungs, through the expired air, while the nonvolatile toxins are, for the most part, eliminated by the cells of the liver.

If for any reason the eliminating power of these organs is interfered with, the toxin would then accumulate in the blood, and give rise to the characteristic changes met with in osteoarthropathy.

Wynn adds another theory in explanation of the toxic theory. It is his belief that autointoxication due to absorption from the intestinal canal is the causative factor in most cases.

As none of the other theories have received recognition, they can be dismissed in a few words. Massalonge (*Policlinico*, Rome, 1897, Vol. IV. p. 512) believed a history of previous rheumatoid affection or a family history of rheumatism important. Thorburn (St. Thomas Hospital reports, 1895) advanced the theory that the changes were essentially tuberculous, a view that has failed of confirmation from a study of recorded autopsies; ascribing the phenomena to trophic disturbances dependent on disease of the nervous system has likewise failed of confirmation; the dependence of the phenomena upon disturbances in the circulatory system has also been claimed. This view is based on the fact that there are several cases on record, in which an aneurism of the subclavian artery was associated with clubbing on the affected side only. In regard to this last factor Wynn has pointed out that such clubbing is in reality edematous, and occurs generally over the limb, being in no particular like that occurring in chronic cardiac disease.

Godlee is inclined to doubt whether osteoarthropathy should be considered as a distinct clinical entity. He suggested that it is simply a form of osteoarthritis, which is associated with chronic septic inflammation, such as gonorrhea, and leukorrhea, the clubbing of the fingers being an independent complication. There is no evidence to support this view.

A review of these theories makes it probable that a toxemia is in some way responsible, the exact workings of which are, however, a matter of speculation.

Wynn, from a study of the recorded autopsies, has summarized the pathological changes as follows: The periosteum is thickened, more vascular than normal, and shows subperiosteal deposit of new bone. The cortex of the bones shows sclerosis and thickening with diminution of the medullary cavity. The medulla is embryonic in character, with a tendency to fatty degeneration in its central part.

Hall (*loc. cit.*) in a case recently reported states that the affected bones were characterized by softness of texture, the postmortem knife dividing them easily.

The joints show erosions of the articular cartilages, periarticular thickening, and thickening of the synovial membrane with an excessive amount of fluid. There is no lipping, osteophytes, or aberration. There are no constant pathological changes in the other organs.

Clubbing of the fingers is now generally looked upon as being due to the same causes as osteoarthropathy. There are a few who would make a distinction between the two conditions, but the arguments in favor of this are not convincing.

It may be going too far to say that clubbing is an incipient or arrested stage of pulmonary osteoarthropathy, but there are several facts which point to this conclusion, and certainly no sharp dividing line can be drawn between the two conditions. Both phenomena are associated with the same conditions; osteoarthropathy is invariably accompanied by clubbing of the fingers and toes, there being no case on record in which osteoarthropathy lacked clubbing. Generally, too, the clubbing is the first evidence of the osteoarthropathic changes. Furthermore, there are cases on record which appeared to be ordinary clubbing, but which on radiographic or postmortem examination showed thickening of the bones.

The enlargement of the ends of the fingers in pulmonary osteoarthropathy has been shown to be due to hyperplasia of the soft parts, principally fat, and the enlargement in simple clubbing is due to the same cause. Wynn found that, in three fingers affected by simple clubbing, the enlargement was due to fat only. Fowler had a clubbed finger removed at autopsy for microscopical examination, but the clubbing entirely disappeared, as a result of preservation in alcohol. Recently I had a similar experience. Two of the extremely clubbed fingers of a colored child were removed and placed in Keiserling's fluid. At the end of a few days, the fingers did not show the slightest semblance of clubbing.

It has always been stated that osteophytic growths were absent in osteoarthropathy. In one of my cases, however, the radiograph shows a spicule growing from the olecranon. D. J. M. Miller (*Archives of Pediatrics*, March, 1905) has put on record the case of a child aged eight, suffering from an interstitial pneumonia and purulent bronchitis. Clubbing of the fingers and toes developed, and radiographic examination showed, besides a periostitis, distinct osteophytic growths.

Both clubbing and osteoarthropathy as a rule, develop gradually and slowly, but at times, both, especially the clubbing, may appear very rapidly. West (Diseases of the Lungs) mentions two cases in one of which clubbing took place in two weeks and in the other in four weeks. Godlee (Fowler and Godlee, Disease of the Lungs) mentions a case in which well marked clubbing appeared in two months. In the case of the woman I have reported, the phenomenon apparently developed very rapidly, according to her story, in a few weeks after the illness in 1904. The other case was of slow development, and was unnoticed by the patient until his attention was called to it.

The symptoms of hypertrophic pulmonary osteoarthropathy are almost entirely objective. Briefly stated they consist in a symmetrical enlargement of the hands, most marked in the finger tips, which are enlarged and bulbous, the so-called drumstick fingers. The nails are sharply curved downward, and resemble a parrot's beak. Enlargement of the lower part of the forearm accompanies this change in the hands. The enlargement is usually due to the formation of new bone, but in some cases (as in Case 1) the enlargement is due entirely to hypertrophy of the soft tissues. Analagous changes take place in the feet and legs. Effusions into the joints are common, the joints most commonly affected being those nearest the bony changes, as the ankle, knee, wrist or elbow. Rarely the hip and shoulder joints are also involved. In all of the cases recorded, the symmetrical distribution of the lesion has been a characteristic of the disease. The woman I have reported shows this symmetry in the hands and forearms, but in the lower extremities, while both are involved, it is not equal. Pain is rarely complained of, but the greatly increased size of the hands interferes in some cases with the finer movements, such as needle work, or writing. Sweating of the palms of the hands and soles of the feet is quite constant. Involvement of the joints, however, does not seem to interfere with motion. The woman reported walks with difficulty, owing to the extreme weight of the affected limb.

Spinal curvature (kyphosis or scoliosis) is not infrequently found, and there may also be clubbing and redness of the end of the nose. Aside from the changes in the extremities, there are no constant symptoms referable to any of the other systems of the body. Various writers have considered in detail associated pathological changes, but none of them are constant in but a few cases, and must be looked upon either as coincidences, or in some way related to the primary disease.

Of itself, hypertrophic pulmonary osteoarthropathy is a harmless condition, and never leads to a fatal termination. The progress of the case depends entirely on the primary condition.

The diagnosis is, as a rule, easy, and rests on the characteristic changes in the extremities associated most commonly with disease of the lung (probably in eighty per cent. of cases).

Osteoarthropathy has been carefully differentiated from all known affections which in any way resemble it. Of these, the most stress has been laid on its resemblance to acromegaly, a similarity which has been greatly overestimated, I think, because Marie's original case afterwards proved to be acromegaly, and not osteoarthropathy.

Acromegaly is primary, due to disease of the pituitary body, and is ultimately fatal. While it causes enlargement of the hands and feet, the nails are not changed, and it involves the whole part symmetrically; joint effusions are rare. Furthermore in acromegaly, the face, lower jaw, tongue and genitals are enlarged, as are also the cartilages of the ear, nose, eyelids and epiglottis.

There is no definite treatment. Efforts should be directed toward the relief of the primary trouble, whenever possible, as there are a few cases on record in which the relief of an empyema led to disappearance of the clubbed fingers.

In the early stages of new bone formation, this might also disappear under similar conditions, but once the bone has become firmly organized, the change will doubtless remain permanent.

The position of Steno's duct must be remembered when operating on the face.—*American Journal of Surgery.*

We are the teachers and not the slaves of our patients.—Osler.

FRACTURES OF THE HEAD AND NECK OF THE RADIUS, WITH REMARKS BASED UPON A SERIES OF SKIAGRAPHS OF TWENTY-THREE CASES FROM THE COLLECTION OF DR. H. K. PANCOAST, SKIAGRAPHER TO THE UNIVERSITY HOSPITAL.

BY T. TURNER THOMAS, M. D.,
Instructor of Surgery in the University of Pennsylvania, Assistant Surgeon to the University and Philadelphia Hospitals, Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

That fractures of the head and neck of the radius occur occasionally, has been demonstrated positively by dissection, but that they are more than surgical curiosities will probably be disputed by many. Skiagraphic evidence, collected by the writer, tends to show that they deserve a place among the common fractures. More recently in a study of this subject, and a report of four new cases, Prat (*Revue d'orthopedie*, March, 1906) has said that it is astonishing how often this fracture has escaped detection, and how brief and rare are the descriptions of it in the books.

It is remarkable that so important a fracture should have escaped the attention of the profession until 1834, when Berard (*Diction de med.*, 1835, *en* 30. Vol. IV., p. 228) discovered the first reported case, at autopsy, almost by accident. In 1880 Bruns, (*Zentralblatt für Chirurgie*, Vol. VII., p. 353) could collect only twenty-one cases from the literature, twenty of which had been proven by anatomical investigation, and in 1905 (*University Medical Bulletin*, Sept. and Oct., 1905), the writer could find only forty-eight. In skiagraphic collections in Philadelphia, fifty-five more were discovered.

The essential facts to which the writer has called attention, concerning the vertical fracture of the head, may be briefly summarized as follows: The approximation of the fragments may be so close that the skiagraph may fail to show the line of fracture, especially if the *x*-rays are directed in an incorrect plane. It is always intracapsular, and frequently fails to give crepitus or deformity, the fragments moving together as one piece, within the closely fitting orbicular ligament. In a fall on the hand with the elbow extended, only the anterior part of the radial head is in contact with the humeral condyle, and, when the head is fractured, it is this part which is broken off. Since the forearm is almost always in pronation in a fall forward on the hand, and since most falls on the hand are forward, the same part of the head is broken off in most cases. Although the *x*-ray, when available, should always be employed, the diagnosis in an uncomplicated case may be made by the symptoms. A history of a fall on the hand is important. The resulting swelling will not be commensurate with the degree of pain and impairment of function, and will be most marked on the outer side of the elbow. Exclusion of fracture of the humerus, ulna and shaft of the radius will be possible without great difficulty. There will, however, be severe pain and tenderness localized to the head of the radius, and limitation of all the movements of the elbow will be evident, more particularly of pronation and supination. Crepitus when present is not marked. Very frequently it can not be elicited. Ankylosis of all the movements of the elbow, more or less marked, during the first month or two following the fracture, is almost pathognomonic.

Dr. Henry K. Pancoast, skiagrapher to the Hospital of the University of Pennsylvania, has kindly placed his collection of skiagraphs of these fractures at the disposal of the writer. Because of the absence of histories in most of the cases, and the obscurities necessarily associated with the skiagraphs, positive conclusions are reached with some difficulty. The greatest difficulties arise from the close approximation of the fragments, and from the fact that the fragments, moving together as one piece within the orbicular ligament, makes it exceedingly difficult to determine with anything like accuracy, in what direction the line of fracture runs. It is thus evident that in directing the rays for the exposure of the fracture there is considerable risk that no fracture will be shown by the skiagraph. The skiagraphs exhibited to the society, will, however, emphasize forcibly some important points, *e. g.* the close approximation of the fragments, and the absence of deformity. We have only to imagine the close-fitting orbicular ligament in position to obtain a sufficient explanation for these conditions, and for the frequent absence of crepitus. The writer would call particular attention to the relative frequency with which the faint line of fracture is shown by a lateral exposure of the elbow to the *x*-ray, although it is more or less obscured by the coronoid process of the ulna. An effort will be made later to explain the advantage of this position.

When the writer read his first paper on this subject before this society, last year, Dr. Pancoast reported that he had skiagraphs of nineteen cases. Those for twenty-three are now available, while several more have been loaned to physicians who have not yet returned them. He considers that he has now about thirty cases in all. Of the twenty-three, eleven may be positively included among the vertical fractures of the head. Five more are probably of the same type, two are injuries of the upper epiphysis of the radius, and five are fractures of the neck.

Of the twenty-three, ten are uncomplicated fractures of the head, and three are uncomplicated fractures of the neck, while the two cases of epiphyseal injury are also uncomplicated. Four are complicated by posterior dislocations of the elbow, and one by an anterior dislocation of the radius. Two are complicated by transverse fractures of the humeral condyles, and one by a fracture of the external condyle. These figures corroborate to a marked degree, the facts already shown by the literature.

In about seven of the uncomplicated fractures of the head, as far as can be judged from the skiagraphs, the small detached fragment is anterior in the prone position of the forearm. In the four cases complicated by posterior dislocation of the elbow, the fragment is anterior and below its normal position. The writer concludes that it was driven downward by the impact of the condyle, when the forearm was in pronation, as in a fall on the hand.

In order to emphasize more forcibly the difficulties in the skiagraphy of the vertical fractures of the head, the writer has had prepared two skiagraphs of an experimental fracture of this type. They will serve to call attention to the necessity for care in the interpretation of a doubtful skiagraph. The specimen represents a complete fracture, separating the anterior third of the head, with the forearm in nearly full pronation, *i. e.* in the position taken by it in the usual fall forward on the hand, which accident is probably responsible for most of the cases. For one skiagraph the forearm bones were placed in the position of nearly full pronation, the detached fragment being then anterior, and the line of fracture passing transversely. A lateral view was then taken, that is, the rays were made to pass as nearly as possible in the line of fracture, this line being slightly angular. For the other skiagraph, the bones were so placed that the line of fracture passed as nearly as possible in an anteroposterior plane, *i. e.* the bones were placed in a position about midway between full supination and the mid-prone position. An anteroposterior view was then taken. If the forearm were in full supination, the detached fragment would have occupied a postero-external position and the line of fracture would have passed obliquely from about the external surface of the head to the posterior surface, and would, therefore, be in an unfavorable position for an anteroposterior or a lateral view.

In comparing these two skiagraphs with those of similar fractures occurring in the living, it should be borne in mind that all the soft tissues were removed from the specimen, the bones being cleaned by scraping and the ligaments by close dissection. The elbow joint had been opened freely, which explains the abnormal relations of the bones, but the orbicular ligament was in place and the fragments closely approximated as they frequently are in life. In the living there will probably always be some slight movement of the limb, especially in children, because of the flash and noise of the *x*-ray machine, so that the absence of movements in the specimen added to the clearness of these two skiagraphs. Moreover the obscurities from over and under exposure have been well avoided.

It is evident, therefore, that we have here two skiagraphs of this obscure fracture, made under the best possible circumstances. How much more obscure would such a fracture have been in the living, with all the tissues, now swollen, in place, the slight movement during the exposure te the *x*-ray, and the practical impossibility of knowing the exact direction of the line of fracture?

If the rays are directed at right angles to the line of fracture, the skiagraph will probably be negative in most cases. Is it possible to determine the direction of the line of fracture, so that we may pass the rays directly through the fracture, or nearly so? If the fracture is due to a fall forward on the hand, and most of them probably are, then we know that at the moment of impact the fragment is anterior, and that the forearm is in pronation; since in all positions of the forearm with extension of the elbow, only the anterior part of the radial head is in contact with the external condyle, and in a fall foward on the hand the forearm is in pronation. Therefore, in a lateral exposure, the rays should pass directly or almost directly in the line of fracture. In the writer's opinion this is the best view to obtain in most cases. Sometimes the fracture shows above the coronoid process, sometimes below, or both, sometimes through it, and at other times in front of it. Another advantage in favor of this position, is the fact that owing to the disturbance within the joint, the pain is so great that for some days at least, no other position will be permitted by the patient.

If the forearm could be so placed that the detached fragment was exactly external, an anteroposterior exposure to the *x*-ray would give a skiagraph of the line of fracture not obscured by the coronoid process. One of the great difficulties, however, is in judging accurately the position of the forearm, when an attempt is made to supinate it. It should be borne in mind that the shoulder is responsible for a considerable degree of rotation, and to what extent the shoulder and elbow are contributing in a particular case, has not been easy to decide. The writer has seen only one case in which a satisfactory result was obtained with an external fragment, and that was in his first case, which was quite the result of accident, as nothing was known then of the mechanism of the fracture by the writer or the skiagrapher. On the other hand he has repeatedly obtained a satisfactory exposure by a lateral view with the forearm in pronation.

Unfortunately all falls on the hand are not forward, and, therefore, the forearm is not always in pronation at the moment of impact. As it is always the anterior part of the head of the radius which will receive the brunt of the force from the external condyle, whatever the degree of rotation, it is evident that a different portion of the head will be involved with each change in the degree of rotation. It is a fact, therefore, of the greatest importance that most falls are forward when the forearm is usually in pronation, since from that fact we know, in most cases, approximately, the positions of the fragment and the time of fracture.

In some cases it was observed that in the first week following the accident, after the acute symptoms had subsided, a considerable degree of rotation was possible. This is due to the close approximation of the fragments, and their inability to move on each other, the head moving as a whole within the orbicular ligament. The more perfect this approximation, the more quickly will rotation be permitted. It is probable, however, that only in very rare cases will complete supination be possible until some weeks after the fragments have united. In this type, the vertical fracture of the head, rotation is most disturbed at the time of the accident and for some weeks later, but it is more rapidly restored than are flexion and extension. While the acute symptoms at the time of the fracture are distinctive of this injury, it is this persistent limitation of flexion and extension, and less markedly of pronation and supination, for some weeks following union, that is most characteristic in the absence of crepitus or a skiagraph showing the line of fracture. When there is wide separation of the fragments or the neck is broken, the skiagraph will have little difficulty in disclosing the fracture. Much care will be necessary in the taking and the interpretation of the skiagraph, in the ordinary vertical fracture of the head, and due attention must be given to the symptoms if overlooking this frequent and obscure injury is to be avoided.

The following case, occurring in the practice of Dr. H. A. Smith of Philadelphia, illustrates a condition in which the skiagraph will be of no avail, however carefully and skillfully it is taken.

A boy, six years old, fell on his left side from a height of three steps, without knowing what part of his body struck the ground. His mother said that, when he was brought into the house, the affected arm hung helpless at his side, and that the pain was very severe. He could not then move the elbow. When Dr. Smith examined the patient, some hours later, there was considerable swelling on the other side of the elbow. Palpation of the condyles of the humerous, the whole of the ulna and the shaft of the radius, did not reveal a point of tenderness or pain. But directly over the head of the radius the pain and tenderness were very severe, both on direct pressure and any attempt to move the forearm. There was much pain on flexion and extension of the elbow, but still greater pain on any attempt to rotate the forearm. Dr. Smith made the diagnosis of fracture of the head of the radius. At the doctor's request, the writer examined the patient, and reached the same conclusion. Since ossification in the radial head does not begin until the fifth year, the skiagraph did not promise help in establishing this diagnosis. Two skiagraphs, however, were tried, one giving a lateral, and the other an anteroposterior view. No shadow of the head was obtained in either. In such a case, if the diagnosis is to be made, it must depend on the symptoms; and in this case they were typical at this stage. Twenty-four days later, the writer examined the patient for the characteristic limitation of movement in the elbow, and found it distinct and typical. The early marked limitation of rotation had disappeared almost entirely, but the flexion and extension, as is also usual, were more distinctly limited, both to about ten degrees of the normal. There was now no pain on movement, and the patient could lift an ordinary kitchen chair with both hands, the affected arm apparently doing as much work as the right. Every sign of fracture of the head, therefore, peculiar to those cases in which the skiagraph had shown positive fracture, was present in this case, and in the writer's opinion, pointed to a positive fracture of the cartilaginous head.

A case somewhat similar to the preceding, occurred in the practice of Dr. W. Drummond of Philadelphia, in a man about middle life. It was the writer's privilege to examine this case also. There was a distinct history of a heavy fall on the hand from a wagon. Every symptom pointed to a severe injury of the radial head, and of no other bone, while the later history showed the typical limitation for some weeks after union. The skiagraph showed only the slightest sign of fracture on the under surface of the head, although this was distinct. If the skiagraph were absolutely negative, the writer would still make a positive diagnosis of fracture of the head, as in the previous case.

In most cases of this type, union occurs in about four weeks and the limitation of movement rapidly disappears in a few weeks following the removal of the dressings. This was so in cases seen by Drs. A. C. Wood, W. Drummond, H. A. Smith, E. Y. Rich, of Philadelphia, and A. B. Donaldson of Bala. In two cases already reported by the writer, union occurred in the usual time in one, while in the other, during rough manipulations by the masseur, a refracture occurred, showing that the union was probably fibrous. In both, the return of function was equally rapid and complete, although, in the latter, slight crepitus shows that nonunion is still present. The writer succeeded in following up two of Dr. Pancoast's cases. In connection with one, the mother of the boy said that the patient failed to return for dressings after the first visit. The original dressing was kept in place for a week or two, and was then taken off, the mother thinking the injury trivial. Full function returned.

In the other case, the fracture occurred about ten months ago. When the writer found him, recently, the patient had become very much discouraged, and he was contemplating giving up his trade to take up lighter work. There is a constant annoying pain in the elbow, and, when using the limb vigorously at his work, the pain is transferred down the forearm (probably from pressure on the posterior interosseous nerve, which winds closely around the head and neck of the radius). Occasionally there is pain in the wrist, and at rare intervals the pain in the elbow is very severe. Extension could be carried only to about thirty or thirty-five degrees of the normal, and flexion to about five degrees of the normal. Limitation of rotation was slight and almost inappreciable. It is worthy of note that at the time of the fracture ten months ago, slight but distinct crepitus was elicited. The skiagraph now shows an ununited fracture.

If these fractures of the upper end of the radius have been common, then it would be interesting to know how many, or what percentage, leave permanent disturbances, as in the preceding case. Again the question naturally arises as to whether an injury, so obscure at the time of its occurrence, will give signs long afterward sufficient to warrant a diagnosis of fracture of the head or neck of the radius. The writer has a skiagraph of a fracture of the neck of the radius, taken about fifteen months after the accident, when there were present no external signs pointing to the original injury, except a slight limitation of rotation. Yet that skiagraph permits no doubt as to the nature of the original injury.

What signs, in a given case, should an old fracture of the head or neck present? Since writing his first paper on this subject, the writer has been anxious to find cases of this kind. The first to arouse his suspicion was in an old acquaintance.

The patient had no pain, but as long as he could remember he had been unable to rotate his forearm. On examination it was found that flexion and extension were free and full, but there was complete inability to rotate the forearm, indicating a probable bony union between the radius and ulna in some part. The palm of the hand was always turned downward, *i. e.* the forearm was fixed in the position of pronation, the position in which fractures of the head and neck usually occur. No deformity could be detected in either the radius or ulna, such as would tend to show the seat of an old fracture. He had never had any bone or joint disease. He had heard his parents, now dead, say that he had sustained a severe injury of the arm but its nature had never been understood. He called the writer's attention to a peculiar movement at the wrist. Although he could not supinate the forearm in the least, he could by a strong effort turn the hand in the direction of extreme pronation so that the palm looked upward. He further called attention to a peculiar deficiency in the lower end of the ulna, which the writer could not explain but was inclined to consider as a gradual disappearance of bony obstruction to the repeated efforts that he had probably made, during many years, to turn the hand in the direction of extreme pronation, in his attempts to compensate for the loss of rotation in the forearm.

It is evident that such complete ankylosis of rotation as exists in this case, following a severe injury, with no evidence of bone or joint disease, must have been caused by a fracture.

A fracture at the lower end of the radius or ulna, or both, which would leave such a result, would almost certainly have been recognized at the time of the accident or later. A fracture of the shafts of the forearm bones, to produce so much disturbance of rotation, would probably have been followed by union of both bones across the interosseous space, and that could hardly have escaped detection. A fracture of the condyles of the humerous, or of the olecranon, would probably have been recognized at the time, and if ankylosis followed, flexion and extension would have been most markedly disturbed, whereas in this case they are not disturbed. Only a fracture of the head or neck of the radius, or both, would have so limited rotation, alone, and at the same time have been so obscure as to escape the attention of the physician. The fact that the forearm is fixed in pronation is also significant, since we know that most of these fractures result from a fall on the hand, with the forearm in pronation. It is probable that the head or neck of the radius was severely injured, and that immediately following the accident he could not rotate the forearm because of the pain, and later because of changes in the shape of the bone.

While the writer was treating a patient for a sprain of the knee, his attention was called to an obscure injury of the elbow which the patient had received about twenty-five years before, and which had left him with limitation of rotation ever since. The diagnosis had never been made.

The patient had fallen from a horse on his hands and had injured his elbow severely. He experiences very little trouble now, but notices that during boxing exercises, in which he frequently indulges for pastime, there is one blow he avoids because his thumb is in the way and is unduly punished. On examination the writer found that pronation was complete, but that supination was not quite complete, and that it was owing to this incomplete supination that his thumb suffered during boxing. Flexion and extension showed nothing abnormal. Suspecting an old fracture of the head of the radius, a skiagraph was taken, and that part of the head broken off in the usual fracture, showed, in the opinion of the writer, slight evidence of an old fracture, which had united leaving too little evidence of deformity to be positively recognized by the skiagraph.

In a third case, the skiagraph was more positive. A medical student informed the writer that at his boarding house was an old man, who had asked to have his forearm examined. The student could not make the diagnosis, and after stating the circumstances of the case, asked the writer for a suggestion as to the cause of the trouble. Suspecting a probable fracture of the head or neck of the radius, the patient was brought to the University Hospital, when Dr. Pancoast took two skiagraphs of the elbow, one a lateral view with the forearm in pronation, and the other an anteroposterior view with the forearm about midway between full supination and the mid-prone position. The latter was the more satisfactory and a corresponding view of the opposite elbow was taken for comparison.

The patient is a man, sixty-four years of age. About fifty years ago, he injured his forearm, he thinks by a wrench while at play with another boy. Although his memory is very vague as to the exact circumstances, he thinks that it was while his arm was still in a sling that he fell from a beam at a considerable height in a partly constructed new building. All that he is certain of now, is that he has not been able since to properly rotate his forearm. Flexion and extension are free and complete. The condition has considerably disabled him as a carpenter, all through his life. He has never known what the nature of the injury was, the diagnosis never having been made. The skiagraph shows clearly, in the writer's opinion, that the radial head has been fractured, and that the deformity shown is sufficient to account for the limitation in rotation.

In fractures of the neck, which unlike those involving the head are transverse or nearly so, impaction is relatively common. That part of the head which is detached in fractures of the head only, is driven downward and forward, by the impact of the humerus, so that the head forms an angle with the shaft. Prat, who wrote at some length on this subject, did not say anything of impaction, but observed that there was a displacement of the upper fragment, which is was difficult or impossible to reduce. He advised excision of the head in these cases. He observed also that crepitus was sometimes absent, and accounted for it by assuming that, owing to the pull of the biceps muscle on the lower fragment, the fractured surfaces were not in contact with each other. From the histories of two cases and the skiagraphs of these two and a third case the writer is inclined to believe that impaction is frequent in uncomplicated fractures of the neck. Three of the four cases in this group seem to show it. The impaction would account for the difficulty in reducing the displacement and for the absence of crepitus, which Prat observed. We know that impaction is common in fractures of the lower end of the bone. The same cause, a fall on the hand, will explain its presence in both fractures. While, theoretically, the biceps might pull the fractured surface of the lower fragment out of contact with that of the upper, as Prat says, the writer can not find any evidence of it in any of these skiagraphs. The writer has already referred to a specimen of this fracture in the Mutter Museum of Philadelphia, showing the typical deformity which Mutter accounted for by the pull of the biceps. The deformity in that specimen corresponds in a marked degree with the deformity shown in all three of the probably impacted fractures of the neck in this group. Much attention was given to this part of the subject by the writer in his first paper, and will not be repeated here. The angulation in the neck is probably due to the downward impact of the external condyle against the anterior part of the head of the radius, which is driven downward and forward, producing the angle in the neck. Even if the pull of the biceps was responsible for the deformity in the museum specimen, as Mutter says, it was not instrumental in separating the fractured surfaces from each other. Prat also says that usually the greatest prominence of the upper fragment was posterior and external. This statement has very little meaning, since it does not give the position of the forearm. When the fracture is due to a fall on the hand in the prone position, the greatest prominence of the head will be anterior in pronation, and by partial supination will be placed in an external position. If full supination could be produced it would occupy a postero-external position.

DISCUSSION.

Dr. William L. Estes, South Bethlehem. I must congratulate the Doctor on the collection of this number of cases, which to me would sound exceedingly improbable if I did not know the source of the pictures and the accuracy of the observations. The fact that he has worked the matter out so that, in one collection, he can present twenty-three cases, all well authenticated, is certainly a matter of exceeding interest. In a work of some twenty-five years with a large number of fractures, I can not recall any single case that I can quite say I diagnosed, or that was one of fracture of the head of the radius, except in instances of serious crushes. I have recently seen the case of a man who had fallen as the Doctor described, that presented thickening of the orbicular ligaments which I thought might have resulted from a fracture of the head of the radius. I could not verify it; I simply suspected it from the fact that there was a small amount of motion either in the radius or the bones above. It has recently been my custom in nearly every case of marked displacement of the condyles of the humerus to do an open operation. I have made careful examination in cases for fractures of the head of the radius and, as I said before, I have never seen a case, excepting where the injury had resulted in a general crush. These facts which the Doctor has put on record are exceedingly interesting and rare. In my practice extending over a period of twenty-five years. I have seen but the one case.

Dr. Thomas, closing: These fractures have escaped recognition even after opening the joint because of the close approximation of the fragments by the orbicular ligament. I have produced fractures experimentally on the cadaver in which there was no displacement.

There were several specimens in which I could not detect the fracture through the unopened ligaments. There was one in which after opening the joint I could not see the line of fracture, it was so close. I rotated the head and still the fragments kept close together. I could not see the line of fracture which was smeared over with thickened joint fluid. Finally I put my hand on the top of the head of the radius and separated a fragment representing about a third of the head.

A NEW PROCEDURE FOR TREATING A PROLAPSE OF THE IRIS COMPLICATING PERFORATING WOUNDS OF THE CORNEA.

BY EDWARD B. HECKEL, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

There is perhaps nothing so perplexingly difficult to handle as a prolapsed iris complicating a perforating wound of the cornea. For some time I have observed that mydriatics will not dilate a pupil with an open or leaking anterior chamber, and that when a pupil has been dilated by atropin or some other mydriatic and the anterior chamber opened so as to allow an escape of aqueous humor and the release of the intraocular pressure, the pupil immediately contracts but will again dilate when the anterior chamber is restored. This is purely mechanical and depends upon well-known hydraulic principles. Myotics, on the contrary, will act even with an open or leaking anterior chamber.

The iris is composed almost entirely of blood vessels which are more or less tortuous in their course and the moment the normal, and to the blood vessels of the iris external, intraocular pressure is released there is a tendency for the blood vessels, under the blood pressure within the vessels, to straighten and for the iris to spread, as it were, and the pupillary space to become smaller. It is exactly on the same principal that a garden hose lying in a tortuous position has a tendency to assume a straight line the moment the water is turned on. It is these fundamental principles of hydraulics that suggested to me the following plan of treating simple prolapse of the iris complicating recent perforating wounds of the cornea.

As soon as the eye and the immediate surroundings are rendered as sterile as possible and all other usual and necessary precautions as to asepsis are strictly observed, then a few drops of a solution of eserin sulphate, one grain to the ounce, are instilled into the eye; this is repeated in five minutes,. and once again five minutes later, making three instillations at intervals of five minutes. The protruding iris is then grasped by means of a small neat iris forceps and cut off closely to the cornea with small scissors curved on the flat. Then a horn spatula which has been shaved off so that it will easily slip into the corneal wound is gently introduced into the wound and slightly and carefully twisted so as to separate the lips of the corneal wound and thus permit the iris, aided by the myotic action of the eserin, to withdraw into the anterior chamber. The horn spatula is then carefully and gently withdrawn. The result is a clean cut coloboma and no adherent iris. This same procedure is found practically impossible without the aid of the myotic action of the eserin. After the iris has withdrawn into the anterior chamber no more eserine is used, in fact after twelve or twenty-four hours it is my practice to use atropin.

Suitable cases do not often present themselves, yet I have had an opportunity to use this method in three cases with very striking and satisfactory results.

DISCUSSION.

Dr. L. Webster Fox, Philadelphia: I was very much interested in Dr. Heckel's paper. Any surgeon that deals with accidents of the kind described always welcomes a hint or thought that he can apply to advantage in his own work. Many such cases are brought to the eye-department of the Medico-Chirurgical Hospital. Whenever a case presents itself with a prolapse of the iris, great care is exercised to remove this prolapse with a small De Wecker's scissors; or to attempt to replace it with a small spatula and, by the use of atropin, to retain it in its place. Frequently this can be done by gently manipulating the cornea, pressing down against it and forcing the iris into place. If two or three days have elapsed since the injury, this can not be done. Dr. Heckel's manipulation commends itself to me from the mechanical standpoint, and I shall certainly apply it at the first opportunity.

Dr. Samuel D. Risley: I have used eserin with a single instillation, allowing the patient to wait half an hour before cutting out the prolapsed iris; but I had not thought of rotating the spatula in the wound. I have, however, pressed the posterior lip of the wound back in order to open it and allow the escape of any incarcerated part of the iris.

Dr. Heckel, closing: Answering the question propounded by a member as to whether I have ever tried to operate without the use of eserin I would say that I have done so. Sometimes we have obtained good results, and sometimes we have not; but the eserin is a great help. The solution contains one grain to the ounce. After the third instillation, no more is given. I should not hesitate to use atropin twenty-four hours afterward, if indicated.

SOME AIDS IN TEACHING CLIMATOLOGY AND CLIMATOTHERAPY.

BY GUY HINSDALE, A. M., M. D.,
Lecturer on Climatology, Medico-Chirurgical
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Few medical schools in this country give any instruction in climatology. It is true that climatic treatment is mentioned and advocated as various diseases are discussed; but the terms employed are so vague that students do not gain definite information as to what constitutes "a suitable climate" casually mentioned, perhaps, as desirable for a case of Bright's disease, hay-fever, or rheumatism.

Special lectures on climatology are delivered in Cornell University Medical

School, New York, by Dr. H. P. Loomis, and an excellent course of instruction in meteorology and climatology by Prof. R. De Courcey Ward is offered as an elective in Harvard University.

In Jefferson Medical College and in the University of Pennsylvania the professors of practice and therapeutics lay considerable stress on the proper use of climates; but Professor Wilson believes that it is necessary to recognize a postgraduate year which will enable the curriculum to be extended so as to include such departments. He does not see how proper time can be given to the subject in a four years' course.

Undoubtedly physiologic therapeutics has been too long neglected and to-day we see a strong demand for natural agencies and we recognize them as more powerful aids than most of our drugs. Such an important subject merits a place in any four years' course. The difficulty in teaching it lies in the largeness of the subject, not in any want of interest on the part of the students.

The climatic influence is a strong one and we should know how it affects the organism. To understand its effects the general principles of meteorology, as applied to climate, must be made clear; and of the lectures which the author delivered at the Medico-Chirurgical College last winter, two were devoted to this fundamental portion of the subject.

In these two lectures the following works on climatology, were exhibited: Solly's Hand-book of Climatology[1]; Hahn's Climatology, translated by Ward[2]; Huggard's Hand-book of Climatic Treatment[3]; Aërotherapy, by Charles Theodore Williams of London; the twenty-one volumes of the Transactions of the American Climatological Association; and the third and fourth volumes of A System of Physiologic Therapeutics, edited by S. Solis-Cohen, and written by Dr. F. Parkes Weber of London and by the author.[4]

Various meteorologic instruments were exhibited and explained, *e. g.* thermometers, barometers, the hydrodike with dry and wet bulb thermometers and scales for noting the relative humidity. The work of the United States Weather Bureau was described and the weather maps were explained. This leads to the subject of atmospheric pressure and the presence of areas of high and low barometer and their tracks across the continent.

Cyclones and hurricanes are explained and the differences between them and tornadoes. Next the course of winds with references to cyclones and anticyclones; temperature and the occurrence of cold waves and hot waves; humidity, absolute and relative, and its effect on the human subject were briefly noted.

In the second lecture the change in barometric pressure during the few days' interval was noted and by the daily weather maps the changes in the weather were explained. This immediately interests the student who will be stimulated to make some observations for himself so as to know what is going on in the climatic world.

A few minutes devoted to the study of instruments other than the ordinary hospital paraphernalia serve to widen his horizon and may plant in the student's mind something that will broaden his field of thought and give him an added interest in climatotherapy.

The second lecture is devoted to the physiologic effects of heat, cold and humidity; the effect of sunlight, altitude and the influence of various soils and the configuration of the earth's surface on its inhabitants.

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[1] Lea Brothers and Company.
[2] The Macmillan Company.
[3] The Macmillan Company.
[4] P. Blakiston's Son and Company.

A third lecture is devoted to the effect of climate on tuberculosis; a fourth to the treatment of bronchitis, Bright's disease, heart disease, rheumatism, gout, hay fever and nervous diseases, such as neurasthenia, hypochondria, etc., by means of properly selected climates.

Any one who is interested in teaching climatology will find a valuable aid in the use of lantern slides. Over three hundred different slides illustrating meteorology are now obtainable through the Geographic Society of Chicago at a very moderate price, and in this way students can see what all the standard government instruments and records look like.

By means of charts showing the facts relating to air pressure and circulation, temperature, sunshine and cloud, humidity and precipitation, thunderstorms and tornadoes, the effect of lightning and floods and some typical localities, it is possible to illustrate the subjects quickly and in this manner engage the eye as well as the ear.

As it is important to leave something tangible in the students' hands for reference, I have prepared a classification of American Health Resorts on a therapeutic basis. It is an attempt to suggest places that, by personal observation or the testimony of others, have some reasonable claim as suitable for the various affections noted. This can be used as a memorandum for future use and is herewith appended. Another aid is to have a single lecture, as for instance on climates and health resorts for the benefit of tuberculosis, printed for distribution so that this very large subject need not consume too large a proportion of the time devoted to the course. This also serves to leave with the student some tangible expression of the teacher's views.

In order to teach one must first learn, and familiarity with various climates and health resorts is best acquired by personal observation. We can not visit all the health resorts or have personal knowledge of all the climates we may recommend. This lack of personal knowledge, of course, leads to frequent disappointment.

In France they have instituted yearly medical journeys of two or three weeks' duration in which physicians participate and thus familiarize themselves with various spas and health stations in some special section of the country. These medical journeys are growing in popularity and are inexpensive, as naturally it is a decided advantage to the resort to have a visit from a body of physicians whose tour of inspection can not fail to add to the reputation and prosperity of the places included in the itinerary.

The Medical Society of the State of Pennsylvania has made a step in the right direction in visiting this year the state's most famous spa, and I have no doubt, if little tours could be organized under the auspices of some responsible body, annual visitations of great value to physicians would become quite as popular here as abroad.

In New York State it would be possible in a fortnight to visit such representative places as Saratoga Springs, Lake George, the sanatoriums at Saranac Lake, Lake Kushaqua, and Ray Brook in the Adirondack Mountains, Sharon Springs, Richfield Springs and the Loomis Sanatorium at Liberty.

A similar trip in the South might include Virginia Hot Springs, Warm Springs, Healing Springs,Rockbridge Alum Springs, White Sulphur Springs, West Virginia, and other more or less famous resorts. The sanatoriums for consumptives at Rutland, Sharon and East Bridgewater, Massachusetts, and North Scituate, Rhode Island, might be brought into another group.

Of course, it would be necessary to arrange for demonstrations of the special climatic features and therapeutic methods pertaining to each place by qualified medical men, and it would no doubt be of great interest to the visitors and a corresponding stimulus to the local men who represent the medical side of the various resorts and spas.

For various reasons the financial management and the purely medical administration at many of our American resorts are not so closely allied as might seem desirable. Undoubtedly the European method of state control can not be carried out so well in this country. In the United States, as far as I know, the only resorts where the United States Government exercises any control are the Hot Springs, Arkansas, and the sanatoriums for tuberculous soldiers of the United States Army at Fort Bayard, and the United States Public Health and Marine Hospital Service Sanatorium at Fort Stanton, New Mexico.

The whole subject, which I have briefly outlined, may then be presented in a practical and interesting manner by the use of the "case system." A brief statement of the patient's history, the diagnosis of the case and the personal features and conditions are given and a student is selected to advise climatic treatment. This advice for the particular patients, whether rich or poor, may then be discussed and various opinions expressed by students may be brought to some practical conclusion. Typical cases should be chosen and, whether real or imaginary, the main points should be noted on the blackboard. This method so successfully used by Cabot, Cannon, Osler, Stengel and others in general medicine has a particularly useful place in teaching climatotherapy.

CLASSIFICATION OF AMERICAN HEALTH RESORTS.

PULMONARY TUBERCULOSIS. Gravenhurst, Ontario; La[illegible] G[illegible]n, Ste Agathe, Quebec; Greenwood Mt. [illegible], Wash.; Lone Lake, Gabriels, Ray Brook, Saranac Lake, Paul Smith's, Lake Kushaqua, N. Y.; Liberty, N. Y.; North Conway, N. H.; Rutland, M[illegible] Sharon, Mass.; East Bridgewater, Mass.; Wallingford, New Canaan, Ct.; South Scituate, R. I.; Lakewood, Hammonton, Vineland, Glen Gardner, N. J.; Kane, Glen Summit, Pocono, Mont Alto, White Haven, Penn.; Asheville, N. C.; Southern Pines, N. C.; Aiken, Camden, S. C.; Thomasville and Summerville, Ga.; Palatka, Enterprise, Fla.; Boerne, Dallas, San Antonio, El Paso and Western Texas; Santa Fe, Las Cruces, Las Vegas Hot Springs, Chico Springs, Fort Bayard, Fort Stanton, Silver City and Albuquerque, New Mexico; Colorado Springs, Denver, Estes Park, Canon City, Boulder, Pueblo, Amity, Powers Co., Colo.; Phoenix, Tempe, Tucson and Prescott, Ariz.; the interior resorts of such as Redlands, Riverside, Indio and Idyllwild, near San Jacinto Mt., Monrovia, Pasadena, Mentone, Esperanza, Altadena; Santa Barbara, San Diego, Southern California; in summer the Rocky Mountains of Idaho, Montana and British Columbia. In cases complicated with kidney disease, and in any advanced stage, high altitudes should be avoided, but hemorrhage is not a counter-indication.

TUBERCULAR LARYNGITIS.—Florida and Southern California.

CHRONIC FIBROID PHTHISIS.—The interior Florida resorts in winter; the sand belt of Georgia, South Carolina and North Carolina. The coast resorts of the southern Atlantic seaboard, including Atlantic City, are suitable for selected cases.

CHRONIC CATARRH OF THE PHARYNX, LARYNX AND NOSE.—Summer: The Long Island and Massachusetts coast; the interior resorts of Maine, Moosehead Lake, Rangeley Lakes, Belgrade Lakes, Poland Springs; the White Mountains of New Hampshire; the Adirondacks, N. Y.; Pocono Mountains, Eagles Mere, Kane, Penn.; the Virginia Springs, the mountains of West Virginia and North Carolina; the southern coast of California, San Diego, Coronado, Santa Barbara; Castle Hot Springs, Arizona; Honolulu, Nassau.

HAY FEVER.—The highlands of Ontario, comprising the Muskoka Lakes, the Lake of Bays, the Magnetawang district, Penetang, Midland, Honey Harbor, Georgian Bay and Kawartha Lakes; Port Arthur and the neighborhood of Thunder Bay, Lake Superior; Yarmouth, Nova Scotia; Cape Breton; Charlottetown, Prince Edward Island; St Andrews, Digby, Dalhousie, Campobello, New Brunswick; Eastport, Vinal Haven, Isle au Haut, Katahdin Iron Works, Moosehead Lake and Rangeley Lakes, Maine; Bethlehem, Maplewood, Profile, Twin Mountain, Mount Pleasant, Fabyans, Crawford, Jefferson, Dixville Notch, N. H.; the Isles of Shoals, N. H.; Baker Island, Block Island, Nantucket, Mass.; the higher Adirondack resorts, *e. g.*, Undercliff, Ruisseaumont and Whiteface, Lake Placid; Ampersand, Saranac Lake; Paul Smith's Blue Mountain Lake, Raquette Lake and Loon Lake; Beach Heaven, N. J.; Put-in-Bay, Ohio; Marquette, Sault Ste. Marie, Mackinac, Mich.; Coronado Beach, Catalina Island, Cal.

ASTHMA, THE NEUROTIC OR SPASMODIC FORM. Elevated sunny regions, *e. g.*, Colorado Springs, Manitou, Glenwood Springs, Colo.; Castle Hot Springs, Ariz.; Hot Springs, Va.; Lake Placid, N. Y.; the White Mountains, N. H.; Kane, Penn. The higher elevations are counter-indicated in aged persons.

CHRONIC DIGESTIVE DISORDERS, INCLUDING CONSTIPATION.—The saline mineral springs including Saratoga and Richfield Springs, N. Y.; Cambridge Springs and Bedford Springs, Penn.; White Sulphur Springs, W. Va.; Napa Soda Springs and Summit Soda Springs, Cal.; Ouray, Springdale Seltzer and Manitou Springs, Colo.; Wilhoit Springs, Ore.

CATARRHAL DISEASE OF THE INTESTINE.—Crab Orchard water, Rockbridge Alum Springs, Va., in summer; Saratoga and Richfield Springs, N. Y.

CHRONIC ALCOHOLISM.—French Lick Springs, Indiana; Bedford Springs, Penn. (summer only).

CHRONIC MALARIAL AFFECTIONS.—Newport, Narragansett, R. I.; Cape Cod and the North Shore of Massachusetts; the Maine coast and interior resorts; Nova Scotia, Cape Breton, the Thousand Islands of the St. Lawrence; Mackinac, Mich.; the interior Canadian resorts, including Muskoka Lake region, Georgian Bay and Lake Superior; Banff, Laggan and Glacier, B. C.; the coast resorts of California.

CHRONIC ARTICULAR RHEUMATISM.—Hot Springs of Virginia, North Carolina, Arkansas, South Dakota, and Mt. Clemens, Mich.; Indian Mud Springs, Klamath Mud Springs, and Hot Mud Springs, Siskyou Co., Cal.; Paso Robles, Redlands, Riverside, Arrowhead Hot Springs, San Diego, Coronado, Cal.; Tucson, Castle Hot Springs, and Phoenix, Ariz.

GOUT AND GOUTY CONDITIONS.—Dry inland

resorts; Hot Springs, Virginia and North Carolina; Mt. Clemens, Mich.; Lakewood, N. J.; Pinehurst, N. C.: Bedford Springs, Penn.; Poland Springs, Maine; Richfield, Sharon, Clifton and Saratoga Springs, N. Y.; Caledonia and St. Leon Springs, Ontario; Banff Hot Springs, B. C. (summer only).

HEART DISEASES.—The coast resorts generally; Glen Springs, N. Y. (summer only); Lake George, the Thousand Islands; Put-in-Bay, Lake Erie; Mackinac, Mich.

AFFECTIONS OF THE LIVER AND BILE DUCTS.—Bedford magnesia springs, Penn.; Sharon, Richfield and Clifton Springs, N. Y.; Saratoga, N. Y.; Waukesha, Wis.; Mt. Clemens, Mich.; Calistoga Springs, Cal.; French Lick Springs, Ind.

BRIGHT'S DISEASE.—In the winter the Florida coast resorts; Brunswick and Thomasville, Ga.; Aiken, Camden and Summerville, S. C.; Southern Pines, Pinehurst, Wilmington, N. C.; Hot Springs, Old Point Comfort, Virginia Beach, Va.; Atlantic City, Cape May, Lakewood, N. J.: Castle Hot Springs, Arizona. In summer, Poland Springs, Me.; Healing Springs, Va.; Long Island resorts, N. Y.; Coronado and San Diego, Cal.; Honolulu, at all seasons. Cool, stimulating climates should be avoided.

DIABETES MELLITUS.—Palm Beach, Miami, St. Augustine, Ormond and other Florida resorts; Aiken, S. C.; Thomasville, Ga.; Cape May, Atlantic City, N. J.; Lakewood, Hammonton, N. J.; Hot Springs, Virginia Beach and Old Point Comfort, Va.; Coronado, Pasadena, San Diego, Redlands, Santa Barbara, Cal.; Clifton Springs, N. Y.

HYSTERIA. AFTER-TREATMENT.—The coast resorts of the Atlantic and Pacific; in summer the mountains of New Hampshire, New York and Virginia. The tonic climate of Maine is especially suitable. (See under "Neurasthenia.")

NEURASTHENIA.—The camps of the Adirondack Mountains, N. Y., of Maine and Canada, are especially suitable for men and selected cases among women; Deer Park and Oakland, Md.; Hot Springs, Va.; the quieter resorts of New Jersey, such as Cape May, Ocean City, Spring Lake, Atlantic City, except in summer; the resorts of Long Island, especially Easthamton, Shelter Island, Quogue and Patchogue; Nantucket, Cape Cod, Newport, Marblehead, Manchester-by-the-Sea, Magnolia, Gloucester, Cape Ann; Rye Beach, Portsmouth, N. H.; Kineo, Me.; York Harbor, Kennebunkport, Kennebunk Beach and the islands about Portland, Maine. Mount Desert and Isleboro are also well suited for the summer treatment of neurasthenia. Paso Robles, Del Monte, and Coronado, Cal. The Canadian Rocky Mountain resorts, Banff Hot Springs, Laggan, Glacier, etc., are suitable for July, August and September. High altitudes should be avoided.

NEURALGIA.—White Sulphur Springs and Capon Springs, W. Va.; Hot Springs, Va.; Saratoga and Clifton Springs, N. Y.; Portland, Ore.; Castle Hot Springs, Ariz.; Paso Robles, Del Monte, Coronado, Cal.

ANEMIA AND GENERAL DEBILITY.—Tonic inland climates, such as the White Mountains of New Hampshire; the Adirondacks, N. Y.; Lake Mohonk, N. Y.; the mountains of Virginia; White Sulphur Springs, W. Va.; Hot Springs, Va.; Sharon, Richfield, Crab Orchard and Oak Orchard Springs, N. Y.; Colorado Springs, Glenwood Springs, Manitou, Colo.; Paso Robles, New Almaden, Vichy, Congress Spring and Napa Soda Spring, in California; the Maine coast and Long Island coast in summer; Castle Hot Springs, Ariz.

THE FEEBLENESS OF AGE.—In winter the Florida resorts; Thomasville, Ga.; Aiken, Summerville, North Augusta and Camden, S. C.; Pinehurst, N. C.; Old Point Comfort, Va.; Cape May, Atlantic City, Spring Lake, Long Branch, Hammonton, Lakewood, N. J. In summer, the New Jersey coast, Long Island, Cape Cod, Nantucket, Martha's Vineyard, Newport, and Narragansett, R. I.; Rye Beach, Portsmouth and New Castle, N. H.; the Maine coast; Rangeley Lakes, White Mountains, Lake George and Lake Champlain, Westport, Elizabethtown, Keene Valley, N. Y.; Saratoga Springs, Clifton Springs, Lake Mohonk, Chautauqua Lake, N. Y.; Put-in-Bay, Ohio; Lake Minnetonka, Minn.; Coronado, San Diego, Pasadena, Santa Barbara, Redlands, Riverside, Mira Monte, Monterey, Santa Cruz, Cal.

SKIN DISEASES.—Hot Springs, Ark.; Hot Springs, Va.; in summer, Warm Springs and Healing Springs, Va.; Richfield Springs, Sharon Springs, N. Y.; Indian Mud Springs, Klamath Mud Springs, Byron Springs, Cal.; Glenwood Springs, Colo.

SYPHILIS.—Hot Springs, Ark.; Hot Springs, S. D.; Mt. Clemens, Mich.; Banff, Canada.

CHRONIC METALLIC POISONING.—Richfield Springs, N. Y.; Bedford Springs, Penn.; Glenwood Springs, Colo.; Hot Springs, Va.; Hot Springs, S. D.; Arrowhead, Coronado, Cal.; Sitka Hot Springs, Alaska.

A CONSIDERATION OF FAILING CARDIAC COMPENSATION.

BY JOHN ALDEN LICHTY, M. PH., M. D.,
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(Read before the Crawford County Medical Society, November 20, 1906.)

At the present time the greatest advances in medicine are being made in the research laboratories of chemical pathology and experimental physiology and therapeutics. The work done in these laboratories has given great emphasis to that side of medicine which is generally looked upon as being scientific in contradistinction to non-scientific or the empirical side. The result is that some subjects in medicine, especially those which do not yield easily to scientific research as it is at present looked upon and pursued, are being neglected, and are not receiving the consideration which their importance demands. I refer to diseases of the circulatory system and especially diseases of the heart. From my own personal observation I can give abundant evidence that in medical societies and organizations of physicians where medical subjects are discussed, the heart and the circulatory system in general do not receive the attention and enthusiastic consideration which other organs and systems of the body receive. In looking over the medical publications for the past year, I have also been particularly impressed with this discrepancy.

In the consideration of this subject I hope to refresh your memories with the teachings you received in your university days when you followed your ward instructor through the hospital to listen for the first time to a heart murmur. I shall also hope to lead you to recall this case and that case which occurred in your subsequent practice, and which, in spite of your greatest effort and care, would often not run the typical course which the text-book described and the ward instructor insisted upon, and finally I shall hope to arouse an enthusiasm for a closer study and, if you will allow the expression, a more scientific consideration of this very important medical subject.

A heart is said to be in perfect compensation when any defect, which may exist either in its structure or action or in both, does not interfere with the maintenance of the circulation in its normal state. The defect may be either valvular or muscular or functional. Whatever it is, as long as the normal circulation is maintained the heart is said to be in a state of compensation. When compensation once begins to fail or is broken, the circulation is interfered with, is no longer in its normal state, and certain symptoms and signs arise.

I need not specify the various cardiac lesions and defects which may arise and lead to the gradual changes in the size and shape and rhythm of the heart as compensation is being maintained. The detection of a heart murmur is usually comparatively easy, as is also the outlining of the size, shape and position of the heart. It is by the detection of the early symptoms of loss of compensation that a physician can be of the greatest service to his patient. Before that time nature has taken care of the lesion, and while he may have an accurate knowledge of the lesion, and know definitely the condition of the heart muscle, there is very little for the physician to do as long as compensation is perfect. Very often the patient and physician never meet during this time. That this is an unfortunate circumstance no one will deny.

Prophylaxis in heart and circulatory diseases is of the greatest importance. And the physician who knows his patient well, may, by a few suggestions, avoid or defer a broken compensation indefinitely, or until some other illness appears which ordinarily proves fatal. It is often urged that persons should have the urine examined every six months or after varying intervals, so as to be able to anticipate the slow encroachment of an oncoming nephritis. It can be urged for the same reasons that an occasional examination of the chest to determine the condition of the heart would enable the physician to give timely advice with reference to heart strain. This is prophylactic medicine, and is or should be taught the community systematically and definitely.

Probably the earliest symptom of an approaching failing compensation is a slight dyspnea. The patient complains of a heaviness, or distress after eating, which may be located below the ensiform cartilage, or any where from this point to the mouth. He complains of gas though he may have had as much gas on the stomach before but it did not give him any inconvenience. He calls it indigestion, and it is surprising to know how often his diagnosis is accepted at its face value and the usual pepsin and hydrochloric acid, or bicarbonate of soda prescribed and the patient turned away. The dyspnea, or heaviness beneath the sternum, is also noticed when going up hill or up a stairway. When such symptoms are complained of by the patient, a careful examination of the heart should always be made. Often a murmur will be heard, and sometimes increased area of cardiac dullness will be detected. If the murmur is not heard, and the size of the heart not appreciably enlarged, the urine should be examined before confirming the patient's diagnosis. This may reveal an unsuspected chronic nephritis, and a further examination of the heart may show that there is after all a slight compensatory hypertrophy, and that the symptoms are due to a slight disturbance of a beautifully adjusted compensation.

Another symptom which is insidious and often overlooked is a persistent cough. Here again the patient will come to you with a diagnosis of bronchitis, and it is the easiest thing in the world to make a hurried examination of the chest which usually is negative and overlook a cardiac lesion which had been delicately compensated but is now showing the first signs of beginning failing compensation. Other slight symptoms may be dizziness, headache, and loss of appetite, symptoms which are sometimes looked upon as an evidence of hepatic insufficiency only, while the cardiac lesion is overlooked.

After these symptoms may come the more prominent ones which are easily recognized, and whose cause can almost be known by merely looking into the patient's face. They are marked dyspnea, slight cyanosis, and a fullness over the upper abdomen. To this latter symptom I wish to call special attention. In certain cardiac lesions, especially in mitral trouble and in myocarditis, the size of the liver is a most important guide to the state of compensation. This is, of course, a late sign, but too often it is the first sign noticed, and unfortunately it is frequently misinterpreted. The liver becomes engorged and enlarged owing to the obstruction to the flow of blood from the inferior vena cava to the right auricle. It indicates that the right ventricle is unable to cope efficiently with the increased pressure in the pulmonary circulation caused by the mitral lesion, and consequently that compensation is imperfect (Broadbent). The liver may become very large and pulsate when tricuspid regurgitation has become established. It is surprising how often this condition is misinterpreted and a diagnosis of some grave hepatic disease is made, such as hypertrophic cirrhosis, cancer, or ptosis of the liver. Not long ago I was called in consultation to see a case which had been under observation for several years. The family physician thought that the attacks of indigestion, which occurred occasionally, were the early symptoms of gastric carcinoma and now it had produced metastasis in the liver. The patient had a loud mitral murmur and an enormously enlarged right ventricle. As far as I could see, this lesion explained all the symptoms which had arisen in the past five years.

I wish here to report a case of my own, which was rather remarkable on account of a prolapsed liver with a lingual lobe which became enlarged during several attacks of loss of compensation.

Mrs. M. R., aged fifty-one, consulted me first in 1904. She complained of dyspnea, a cough, and inability to lie down and sleep. She had a large heart and a distinct mitral murmur. In the right side of the abdomen was a large mass, slightly movable, which had all the appearances of a neoplasm, possibly of the right kidney. There was, however, no dullness in the hepatic area, and, on account of this peculiarity, I was rather compelled to consider the mass as being a part or the whole of the liver. After a rest of a month and the administration of digitalis and other heart remedies, the mass was smaller and appeared plainly to be a prolapsed liver. During the course of a year the patient had several attacks of cardiac incompetence, and each time this peculiarly shaped mass appeared. There was always albumin in the urine, and during one of the attacks the patient became uremic and died. At the autopsy the liver was found prolapsed and had a large lingual lobe extending down from the right lobe. It could be seen how, when the organ was congested, it took such a peculiar and rather misleading shape.

In my experience it seems that the left lobe of the liver first becomes enlarged. I find this so often that I feel almost certain of some cardiac lesion when the left lobe of the liver is enlarged, even if I am not able to elicit the signs with a stethoscope.

In reëstablishing compensation the symptoms will be found to disappear as the size of the left lobe diminishes. Very often digestive disturbance will be the first symptom of a loss of compensation. The patient is so impressed with these symptoms that it is difficult to persuade him that his trouble is cardiac. It seems to me that physicians sometimes are prone to encourage this idea when they are well aware that a serious heart lesion exists. I hope the day will soon come, and no one can hasten it more than the intelligent physician, when we will be able to talk as deliberately to our patients about the actual condition of their heart as we now talk about their lungs or appendices. It is not right that a patient with a heart lesion should be kept ignorant of it and allowed to do all of those things which tend to disturb a well balanced compensation which otherwise might last for years.

Pleural effusion, ascites, and edema of the extremities are of course late symptoms of cardiac failure. I shall not do more than mention them and then go on with the treatment of failing cardiac compensation.

I shall not consider the treatment of these cases in which compensation is established, however important it is. The maintenance of this condition often requires all the art, tact and science which a physician can command. Exercise, occupation, habits, clothing, baths, food, climate, altitude, and social relations are factors, the proper consideration of which determines the length of life of the patient, and the neglect of which brings on the symptoms of which I have already spoken. Neither shall I speak of the care which should be taken to avoid serious after results with cases which have developed an acute cardiac lesion.

In some cases the development of complete cardiac compensation may be impossible, owing to the extent of the damage sustained by the valves. In such an event the course of the disease is usually very short. In those cases in which compensation has been perfect for some time, if the early symptoms of broken compensation which I have mentioned heretofore are recognized, very much can be done in the way of treatment. First of all the cause of the failure must be ascertained and removed at once if possible. This may be physical overexertion, nervous and mental strain, overeating, or an excess of any kind. Next, rest must be instituted. This should be perfect rest in bed. The bowels should be opened thoroughly, a mercurial purge being preferable. The amount of liquids taken by mouth should be restricted, and the quality and quantity of food regulated. I have experienced very satisfactory results by restricting the amount of liquids in these cases.

Prof. von Noorden has recently published a little monograph on drink restriction in which he sounds a timely warning against the free and reckless habit of prescribing the drinking of abundance of water for all ailments. I have several times seen patients who, having spent a short time at one or other of the resorts, noted for their all healing waters, had broken a compensation by drinking too much water.

When compensation has once begun to fail, it will be found that the foregoing directions will not be sufficient to bring relief. Medicines must be administered. Digitalis stands alone as the great heart remedy. Its action, in properly selected cases, at the proper time, and in proper dose, is always the most gratifying. I have seen cases where for some reason or other digitalis was withheld, though every symptom seemed to be a plea for its administration, and when it was given, the change wrought seemed marvelous. There is no remedy which requires greater care in its administration. It is beyond the scope of my paper to discuss the indications and contraindications for digitalis. Beginning cardiac failure is the great indication for its administration. Of the various preparations to be used, each physician may have his preference. That preparation should be used which is found to be most reliable. In my own experience I find the powdered leaves the most satisfactory. The tincture ought to be reliable and is prescribed probably most frequently; after it the infusion, then the powder, and lastly the fluid extract. I often find a physician using the tincture in small doses, and when the symptoms become urgent change to the infusion to find more satisfactory results.

In a recent conversation with Prof. H. C. Wood of the University of Pennsylvania who has probably done more than any other man to bring digitalis before the medical world, I mentioned this observation and asked for an explanation. He said doctors seem to be afraid of the tincture of digitalis and rarely prescribe it in a sufficient dose, whereas they will prescribe the infusion in apparently recklessly large doses and get the desired results. I prefer the dried powdered leaves because the other preparations are often unreliable. There can be no uniformity of strength of the infusion, and each druggist has his own ideas of what constitutes the best tincture. The powder can be administered in capsule and the usually disagreeable taste avoided.

Digitalin is the most suitable preparation for hypodermic use. In the small dose usually given I am confident its administration is useless. In the largest dose, I have never seen that profound action which is sometimes seen with the other preparations, and yet I am not willing to say that it is a worthless preparation. Other remedies which may be employed are strophanthus, nux vomica and its alkaloid, strychnin, caffein, and probably the ammonia salts. You will remember I am speaking now only of those cardiac tonics and stimulants used in loss of compensation. I shall not attempt to tell you when one should be used in preference to the other, except to say that when digitalis fails, you may try any one of the others and demonstrate to your own satisfaction that it usually will fail also.

When there is high arterial tension, as there is sometimes, especially in the very beginning of cardiac failure, nitroglycerin and the nitrites are indicated. I no longer administer these remedies without first determining with approximate certainty that there is really a hypertension. This can now be readily determined by the use of the syphgmomanometer.

Usually other remedies are required to meet certain complications of failing compensation. The early administration of a compound cathartic pill, sulphate of magnesia or calomel may change the entire course of the affection. Later, when the kidneys become inactive, powdered squills and other diuretics must be employed. There is an old combination which goes by the name of Niemeyer's pill and covers nearly every indication which may arise in the course of a loss of cardiac compensation. Those who use it I find are always fond of it and too often withhold it for extreme conditions.

It sometimes happens that the dyspnea and cough are so distressing the patient is unable to obtain much needed sleep. Under such circumstances morphin or codein in guarded doses are absolutely necessary. I have in the past few years become very partial to the use of small repeated doses of heroin for this condition. Its action is most grateful and several times seemed to avert a fatal issue.

The treatment of the first attack in the way I have outlined is usually most gratifying. The patient feels as though he has been rescued from imminent danger which is really the fact. Unless he is warned of a repetition of the symptoms which will come all the easier now, he will likely place undue confidence in your ability and skill and immediately repeat his former excesses.

It is well known that after a few attacks of broken compensation the ordinary remedies and procedures no longer are effective and the patient in due time succumbs to the inevitable. It is therefore necessary to be most explicit in your directions after the acute symptoms of the first attack have passed by, and assume the same control over your patient as an administrator of an estate, or a man with power of attorney assumes over his client. Rest must be absolute and without any compromise. When the heart has gained a sufficient degree of strength as is shown by the removal of secondary congestions, a few resistance exercises may be undertaken, light massage may be made heavier, and, later, gradual exercise begun. These may be increased until the patient seems as well as he was before his illness. He is now in a position to take prophylactic measures to avert the next attack. His business activities must be permanently curtailed, his hours shorter, and his vacations longer. During his vacation he should take advantage of the various resorts which offer reasonable assurance of benefit. A change from a higher to a lower altitude may be necessary. I have several times sent patients to the seashore who could barely retain their compensation, to find them returning in excellent circulatory balance.

During the past ten or fifteen years the baths of Bad Nauheim, near Frankfort-on-the-Main, have gained an increasing reputation as being beneficial to those suffering from cardiac disease. It was my privilege to visit this place during the past summer and also to take a short course of baths. It was my purpose principally to determine as nearly as possible what effect could be expected from the baths, and what class of heart patients could be safely and with benefit directed to Nauheim. For the information which I received I am largely indebted to Dr. Heineman, a fellow countryman, who has had a very active practice at the baths for the past ten years, and to Professor Groedel who kindly directed me to his book, "Bad Nauheim, Its Springs and Their Uses."

The principle of the Nauheim baths is directly in the line of all other successful treatments for defective hearts: namely, the removal of cardiac strain so that the muscle can have an opportunity to recuperate itself and adjust itself to defective valvular action. At Nauheim this is done by producing a profound change in the peripheral circulation, without doing any injury to the already weakened and disabled heart. We are all aware of the difficulty of doing this with the ordinary means at our command, such as massage, heat and cold (dry or moist), exercise, resistance movements, etc. At Nauheim with the peculiar character of their waters they easily surmount these difficulties. The waters which contain some very strong salts such as chlorid of calcium, chlorid of potassium, and chlorid of magnesia, are charged with about three per cent. of carbonic acid gas and have a natural temperature ranging from 90 to 95 degrees Fahrenheit. With a little care the salts can be easily increased or reduced, the effervescence can be regulated as can also the temperature. In this way the bath can be adjusted to all conditions.

The baths usually given are the ordinary brine bath (Sool-bad), the water being free from carbonic acid gas; the thermal brine bath (Thermal-bad), the water being brought from an open reservoir which retains nearly all the heat, but allows the escape of some gas; the effervescent bath, (Sprudel-bad), the water being brought directly from the interior of the earth to the bath tub and containing all the gas and heat and saline principles; and the effervescent thermal brine bath, (Thermal-Sprudel-bad) the water being brought from a constructed subterranean reservoir and modified so as to give an easily graduated bath between the mild Thermal and the heavy Sprudel. Besides, these five baths can be modified by allowing the water to run slowly or rapidly through the tub while the patient is immersed in the bath (Strom-bad).

As Dr. Heineman aptly suggested, "One can have the water changed every minute and in fifteen minutes have the benefit of fifteen baths." I myself took a Sprudel-Strom-bad and can testify to the effect it has on the peripheral circulation. The skin reddened as it does in a strong mustard bath, and yet the water was pleasantly cool.

My visit at the springs was not long enough to make any original observations of the effect of the baths just described upon the heart, but I was convinced by my experience and the statements of the very able and congenial professional men, with whom I had the pleasure of meeting and conversing, that the baths can be adapted to almost all grades of failing cardiac compensation, and that they can also be used beneficially in a prophylactic way by those who enjoy complete compensation which may have never been broken. It is more, then, a question of who is able to make the trip to Nauheim, than it is, will the baths agree. With the present convenient and luxurious means of ocean travel, I feel more inclined to advise my patients to undertake the cure at Bad Nauheim than I have heretofore. There are only two risks which the patient takes, one is that of having an unusually rough ocean voyage, and the other is that he may be enticed by the various incentives to travel in Europe and undo all he has gained at the baths. I am also convinced after my brief sojourn in Bad Nauheim that any attempt at producing the effect of the baths by the use of artificial salts, can only barely approximate the effects produced by the natural waters.

Referring again then to the subject of my paper, after the physician has done all and used every means at his command to re-establish a broken compensation, if the patient is able to make the trip, able physically and financially, a carefully directed course of baths at Nauheim may add years to his life.

Finally a word as to prognosis: Much can be done for these cases, as I have tried to show, and the results are often most gratifying, but the proverbial span of life is three score years and ten. By that I understand very much as Dr. Holmes had us understand with the "Deacon's One-Hoss Shay," that after a certain time we can expect, in a perfectly adjusted human system, everything to go to smash all at once, and apparently nothing first, and the patient leaves us by the undertaker's route. With a heart which has been for twenty or thirty years, doing four thirds of the normal work for which it was intended, what else can be expected but that in the course of time it will give out absolutely in spite of the most intelligent care. It is not the fault of your preparation of digitalis, of your régime or of anything you may feel like recalling with regret. It is the result of natural law.

OPTIC NEURITIS IN TUMOR OF THE BRAIN. A PLEA FOR EARLY SURGICAL INTERVENTION.

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(Read before the Northwest Branch of the Philadelphia County Medical Society, January 3, 1907.)

My motive for presenting this paper is to call attention to the necessity for prompt surgical intervention in all cases suggestive of tumor of the brain. The subject is not new; it has held my attention since 1893. I have been led to speak of it because of my personal interest in several very sad cases which I now feel were lost because this plan of treatment was not sufficiently urged until too late. I shall, however, speak of only one aspect of the case; namely, optic neuritis in tumor of the brain.

The cardinal symptoms of tumor of the brain are headache, vomiting and blindness, but the greatest of these is blindness, than which it is hardly possible to conceive one more melancholy, since the patient may survive for many years completely blind. The importance of this symptom is vital not only to the patient, but also to the community. Hence the subject merits the fullest attention.

Although it has been known in a vague way since the time of our earliest medical records that the visual function was menaced by intracranial disease and that blindness often resulted from it, it was not possible to know this certainly until the comparatively recent advances which have been made in our knowledge of the normal pathologic anatomy of the central nervous system had brought about a better understanding of the visual paths in the brain. Neither could we know to what extent the ocular tissues could be damaged by intracranial disease before the invention of the ophthalmoscope.

In 1854, Von Graefe first called attention to the altered appearances of the intraocular ends of the optic nerves in cases of intracranial tumor, and ever since then the mode of the causation of optic neuritis has been the subject of constant discussion and controversy. Yet the results of the fruitful investigations of clinicians and pathologists in the past thirty years have led us to the conclusion, that, whatever other factors might be concommitant, the most important one in the production of optic neuritis is an increase of the intracranial tension. This increase of tension can arise only by an inflammation of the meninges of the brain or else through the pressure exerted by the presence of a tumor within the cranial cavity.

Optic neuritis is not always an early symptom but often develops only when the case approaches its termination; it is, however, accepted, by all authorities, as true that it occurs in about ninety per cent. of the cases of intracranial tumors. It is well known that a tumor even of large size may be present without giving rise to optic neuritis, while small ones may rapidly produce it; and optic neuritis may exist without there being a cerebral tumor.

When the growth of a tumor is slow and the absorption of the surrounding tissues proceeds with the development of the neoplasm, there may be no visible change in the intraocular end of the nerve; but when there is a rapid growth and congestion, or because the tumor compresses some of the vascular sinuses, then choking of the disc usually ensues. Choking of the disc is especially likely to occur when the larger cerebral sinuses are pushed against the walls of the skull, because then the transudation of serum into the meningeal spaces may be excessive.

The ordinary sequence in the changes noticed in the intraocular end of the optic nerve seems to be, first, an increased redness of the disc with slight turgescence of the veins and a serous effusion between the nerve fibers. Then the normal boundaries of the disc become veiled by the hazy retinal fibers, usually noticed first at the upper and lower edges. Soon the outlines become hidden by the increasing swelling and the disc becomes prominent and projects into the vitreous as a small rounded mass.

This increase in the color of the disc is due to the smaller vessels becoming injected. In the early stages the surface of the disc appears striated. The vessels about the disc are hidden from view for a considerable distance by the swollen nerve fibers. Farther out in the periphery of the retina they reappear, for there the retinal fibers are thinner and more transparent. Later on, the lymph effused into the nerve-head becomes opaque and begins to contract, squeezing the finer vessels until they are obliterated, and only the large and turgid veins remain visible. Finally, the swollen papilla begins to shrink, and, after a period of several months, slowly regains the retinal level, but so changed and contracted that it now appears as a whitish, opaque and atrophic disc.

In the early stages of the swelling of the disc the visual acuity may be but little changed. It is only after the swelling has existed for some time and has reached a high degree that we have marked diminution in sight and an increase in the size of the blind spot, with a contraction of the color and form fields. The symptoms arise through the continued pressure upon the delicate nerve fibers and from the contraction of the exudation into the swollen disc. Thus it is that the early symptoms of intracranial growths and the accompanying optic neuritis are often overlooked. At times we meet with cases in which there is the history of frequent attacks of transient blindness or dimness of sight. These attacks last for periods varying from a few seconds to half an hour (this was the case in an instance of cerebellar tumor recently under my care), and they may be due to some interference with the blood supply in the occipital lobe. On the other hand, the increased headaches and the attacks of giddiness which accompany this symptom point to an increase in the intracranial pressure as the cause of the symptom. If that is so, it may act by causing a temporary strangulation of the nerve, either at the foramen or behind the disc; in the latter condition, however, the ophthalmoscopic appearance is quite different. Here we find the discs pallid and swollen, with an intense gray haze on their surfaces and extending out into the fiber layer of the retina, while the small veins and capillaries are not apparent.

It is well for us to consider certain details concerning the optic neuritis, especially their importance in affecting the surgical diagnosis as well as the prognosis in given cases of brain tumor. As a rule the optic neuritis occurs on both sides, without, however, always presenting equal degrees of swelling of the discs, or of damage to the retina. It becomes difficult, therefore, to decide upon which side of the brain the disturbing element lies and which eye was affected first. The systematic writers are divided upon the subject, for some state that the neuritis occurs first in the eye opposite the lesion; others that it depends upon the nature of the lesion and upon its position, whether it is above or below the tentorium; while Horsley, after the examination of his own cases, now a large number, unhesitatingly declares that the optic neuritis commences on the side of the lesion.

Again, in viewing the eyes affected with optic neuritis, the condition of each nerve may lead to false conceptions as to the stage of the neuritis, and prove difficult for us to decide whether they each present progressive or regressive changes. It is not merely a question of the number of diopters required to measure the height of the disc, but it is also a matter of the anatomic changes in the disc and the retina, and, perhaps when seen for the first time, the disc on the side of the lesion may be subsiding into a decadent condition at a period when the opposite disc is rising to its greatest swelling.

The relation between the site of the tumor and the visual acuity is of distinct value, for, as Paton found in his group of cerebral tumors, when the frontal lobes were involved, the visual acuity may remain unaffected throughout the whole course; in one instance there was full recovery after a transitory reduction; and, where there was neuritis on the side of the tumor, the vision was bad, while it remained normal on the unaffected side. Parietal tumors produced greater damage, with less likelihood of recovery after serious defect. In eleven cases of cerebellar tumor only one showed no marked loss, six had good recovery, three had a total loss, and in another there was preservation on the sound side with loss on the affected side.

It is not only the optic nerve that becomes involved in intracranial growths. Five other cranial nerves supply the eye and its appendages, three of which are devoted to these organs. Accordingly, any pressure, or degeneration of any part of their trunks, or of the midbrain, or of the cortical centers, would produce an interference with their functions and pronounced symptoms of disturbance. Thus, double vision, due to impaired action of the straight or oblique muscles; paresis of the pupillary or ciliary muscles; loss of power in the elevators of the lids, or in the orbiculars, are all of frequent occurrence, and aid us in diagnosticating and localizing an intracranial growth.

Correct diagnosis in disease of the nervous system is far from settled, and the study of neurology should be pushed forward by every means in our power in order that the earliest commencement of a tumor of the brain should be determined as certainly as that of one nearer the surface of the body. Therefore, the knowledge of these associated ocular symptoms and the understanding of the nature of the lesions affecting them are essential to the adequate treatment of any case of cerebral tumor.

From what has been stated already, it must be apparent to us that all these symptoms are dependent upon prolonged intracranial pressure, and the anxious problem presented is to remove the cause of pressure and to avert the serious consequences resulting from it. The difficulty lies in the direction of determining the character as well as the location of the tumor.

If it were possible to ascertain the point from which the tumor took its origin we should have a valuable guide as to the effectiveness of operations upon brain tumors. The further away from the cortex a tumor is, or the nearer it is to the base of the brain, the more likely it is to prove an inoperable growth. In the advancement of the diagnosis of brain tumors, therefore, lies the future of their surgical treatment; and yet, different cases present very different amounts of evidence; sometimes of such a nature and degree as to show distinctly the existence of intracranial disease; at other times slight in amount and not manifestly cerebral in origin. It is here that the ophthalmoscope is of the greatest value, for as we have learned, optic neuritis is commonly present in the course of intracranial disease, and, therefore the beginnings of optic neuritis may be the earliest definite sign. It must be remembered, however, that optic neuritis, even in its gravest form, may be dependent upon other causes than brain tumor, for it has been noticed in severe anemia and certain toxic states.

It must be borne in mind that the usual clinical effect of an intracranial tumor is due not only to the pressure or to the mechanical displacement which the tumor produces, but to the vascular and inflammatory disturbances as well, which are excited in the neighborhood of the tumor. Accordingly, if a tumor should cease to grow, it is to be expected that such disturbances will subside with a corresponding diminution in the symptoms due to them.

The possibility of recovery from the symptoms, and even of severe symptoms of brain tumor, must necessarily be considered in determining the line of treatment to be pursued. Probably most will agree that when the diagnosis of intracranial tumor is accompanied by localizing symptoms, surgical interference should be anxiously considered; that, in any case where this it not deemed advisable, medical treatment must consist of attempts to deal with the more troublesome symptoms; and that, in event of recovery occurring, the measures indicated are those best calculated to promote and secure the general vigor of the patient.

Assuming now that, in a given case, surgical treatment is considered advisable, the question immediately arises, for what precise purpose is it to be employed; for all treatment, surgical or medical, is either palliative or curative.

The fact, that optic neuritis associated with intracranial tumor, as a rule, subsides after trephining, was first stated and its significance noted by Victor Horsley. Hughlings Jackson, as long ago as 1888, refers to it as an observation of Horsley. In 1890, at the Berlin Congress, Horsley again urged that when thorough drug medication had been energetically applied for about six or eight weeks without apparent cure in cases suggestive of gross organic disease of the brain, surgical treatment should be employed, for, as he pointed out, opening of the skull caused the swelling of the optic disc to subside, and the subsidence may proceed steadily to complete recovery provided atrophy has not previously begun.

Since Horsley's first results, the greatest surgeons, among whom may be mentioned Lister, Annandale, Macewen and Keen (not to mention the band of younger workers in the field of cerebral surgery), have been adding to the list of successful cases, yet the gravity of the condition and the simplicity of the plan of relief do not seem to be recognized. Sir Victor, in his masterful address on surgery, before the British Medical Association, in June last, declared that "in no case of optic neuritis, not of course of toxic or anemic origin, should the process be allowed to continue after it had once been diagnosed, and if blindness results therefrom the responsibility is very heavy on any one who fails to advise such a simple proceeding as opening the dura mater."

This dictum from so accomplished and experienced an authority, deserves our fullest acceptance. The expectant treatment is so fraught with danger to the patient that only a relatively brief course of treatment by drugs should be pursued before the aid of surgery is to be sought. Moreover, as is now well recognized, patients in all cases of intracranial tension are liable to die at any moment from the sudden paralysis of the respiratory center. Or, as has been shown in some of the reported cases, sudden death has occurred apparently as a result of the intense severity of the headache and pain which have suddenly inhibited the heart's action. Others may die in the midst of an epileptic fit brought on by the greatly increased intracranial pressure. How often one sees these accidents in cases of intracranial tumor which are only at the last transferred for surgical treatment. Therefore, the surgeon should be invited to consultation in any case presenting symptoms sufficiently pronounced to lead the attending physician to presume that he is dealing with one of cerebral tumor, in which medical treatment for a period of six weeks has proved unsuccessful.

Another reason for seeking the aid of the surgeon early is the likelihood of obtaining help in the recovery at this period while yet the patient's vitality is unreduced. In the early days of cerebral surgery deaths were due to the failure of the respiratory center; due, no doubt, to a degree of anesthesia which, though perhaps not necessarily lethal in an ordinary case, was fully so to a patient whose medulla was hampered by previous tumor pressure.

With these facts before us, it is not too much for Allan Starr to say that "the skull should be opened in every case of brain tumor whether it is expected to get the tumor or not, for it may do good, or it may not, but the patient has the benefit of the chance that it may."

It is true that in a certain number of cases the patients have made a good recovery with or without impairment of sight, under medical treatment, or indeed with no treatment at all, yet experience amply testifies how frail a support this hope is to lean upon. There is abundant evidence to show that intracranial morbid processes may lie dormant for variable periods only to break out again with destructive effects.

Palliative treatment, therefore, has an important place in cerebral surgery; the operations are not new and the temporary benefits to be derived in this way have been fully recognized by physicians for many years past. Jaboulay, in 1896, in referring to the subject of trephining in cases of cerebral tumor ascribes to Horsley the honor of having first advocated it as a palliative operation, and he terms the procedure as a "decompressive operation."

This decompressive operation is done in two stages; the first step consisting in the removal of the bone, and then, if the patient is strong enough, the operation is completed by a free incision of the dura. The opening in the skull must always be free enough to allow of a proper survey of the brain, yet no more injury should be done to the brain than is absolutely necessary. In some cases there may be such shock and loss of blood that it may be necessary to defer the second step for several days.

When the opening is made over the cerebellum, the dura must not be opened immediately, for it is the opening of the skull which causes the general depression of nervous energy, and the alteration in the circulation is greater than when the dura is opened.

Just when the operation should be performed is somewhat perplexing; perhaps it is well enough to wait until the vision is beginning to be impaired, if that defect is not already complained of, and yet the optic neuritis must not be allowed to advance far.

It is difficult to interpret the appearances of the disc and to prognosticate from them what the result upon the visual acuity will be when the neuritis has subsided. Often bad prognoses have given good results; but no good prognoses have been followed by bad results. Everything depends upon the care with which the ophthalmoscopic appearances are interpreted. Simple swelling of the disc may have led only to the diminution of sight, which may not only be relieved, but greatly restored, by the operation. Whereas, when yellowish-white patches of exudate are seen stippling the retina, or when there are large opalescent, atrophic areas in the fundus, and especially when the macula is involved, then we must expect an improvement of the vision only in proportion to the extent of these defects, for these are secondary changes and they are permanent.

Optic neuritis may disappear even though the dura has not been opened. Not much change is noticed immediately after the operation, or in the interval between the two steps when the operation is uncompleted, except in rare instances. Cushing cites two instances where he observed the choked disc to subside completely a few hours after a palliative operation. In a week or two after, however, definite and progressive subsidence of the swelling of the nerve has been noted. In some of Paton's cases, at the end of two months it had totally disappeared and there was manifested a remarkable recovery of function. The changes in the nerve-head after operation are in the reverse of the order of their progress before the operation. When a tumor involves the optic tract, the especially delicate structures of the tract may be damaged so badly as to yield less happy results; neither can the functions of lower centers be restored if their cortical expansions have been removed, nor can compensation be regained when the centers have been destroyed. Jaboulay believes that the relief in the palliative operation is greater for tumors of the cerebellum and the adjoining parts than for tumors of the cerebrum.

The question of the effect of the palliative operation on the growth of an intracranial tumor is of interest. Spiller believes that it does not arrest the growth nor cause atrophy of the tumor, yet on the other hand, the growth of the tumor is not hastened thereby, although Horsley held the opinion that partial ablation might retard the growth of the remaining portion.

In special instances there may be untoward events which will continue all the symptoms or produce fatal effects; secondary hemorrhagic extravasations may find their way into the ventricles; edema may follow and keep up the pressures, and unrelieved pressure is a matter of great practical importance in ordinary palliative operations performed to abolish optic neuritis and to relieve headache.

When the tumor is cystic the swelling of the optic nerve disappears more rapidly than it does in the case of a denser tumor.

It must be patent to all that, as simple as these operations appear to be, no one who is not skilled in brain surgery should perform them. Failure in exact topography may result in the continuance of pressure over the site of the lesion and even cause death. The importance of exact localization is shown by a regression of symptoms in many recorded cases in which it was impossible to remove the tumor because of its size or distribution. Especially should an inexperienced surgeon refrain from operating in the advanced period of the disease, for death from shock is not then exceptional.

If the operation is undertaken for the purpose of effecting a cure, we have to consider, first, what is the nature of the disease; second, what loss or aberration of nervous function it causes; third, whether if the lesion be wholly extirpated there will be recovery from the disordered function, and fourth, whether any loss which may have been present before operation will be made permanent by the necessary extirpation of particular regions of the brain. And, again, we must consider whether or not we may be able to remove the tumor in its entirety, and whether or not, if the lesion can not be localized, we are justified in adopting some immediate measures for the relief of the intense headaches, or the distressing loss of vision.

The curative operation is intended to remove the cause. This may be considered to be the inevitable later procedure in all decompressive operations, which are, in a general sense, only exploratory trephinings. The palliative operation is not to take the place of a radical operation when the latter can be performed without great risk to the patient. If the tumor is exposed at the trephining it should be removed entirely if possible, or only partially, reserving the remainder for subsequent operations; at the same time it should be remembered that the size of the growth is not of itself of much account. Yet in some instances the nature of the tumor may forbid its removal; extensive gliosarcomata preclude operative intervention. But even in such cases trephining and the incision of the dura afford marked relief of symptoms. The removal of the tumor after the dura has been opened is very often attended by but relatively little shock.

Horsley noticed early, and this observation he has fully confirmed by his later experience, that if there be atrophy of the optic nerve after operation the amount of the neuritis may disappear but the atrophy becomes absolutely permanent. He therefore did not operate when atrophy was marked. In spite of his wisdom in the matter, it would seem to be our duty to undertake these operations, for we now know how greatly they improve the general health in spite of failure to restore sight. He noticed also that there was no recurrence of optic neuritis after removal of the tumor even in the event of recurrence of the tumor.

The removal of the tumor relieves the cause, no matter what may be the hypothesis. How the opening of the skull relieves is not so easily seen unless it reduces the pressure which has been the effective agent in producing the optic neuritis.

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PERIL OF THE SPECIALIST.

Scientist—Scalpal is a specialist is he not?

Criticus—I should say so. Why that man has specialized down so fine that to all intents and purposes he is incompetent.—Town Topics.

Don't make promises to heal when it is impossible to heal.—Osler.

REPORT ON BRANCH ASSOCIATIONS.

We renew our recommendation that permission be given for the organization of seven branches, at the direction of state associations composing them, so arranged as to cover the entire country. Provisionally, it is suggested that the branches be numbered and named, and that they shall contain or have assigned to them states and territories, as follows:—

1. North Atlantic Branch: New York, New Jersey, Connecticut, Rhode Island, Massachusetts, Maine, Vermont and New Hampshire.
2. Atlantic Coast Branch: Pennsylvania, Maryland, Delaware, District of Columbia, Virginia, North Carolina, South Carolina and Porto Rico.
3. Southern and Gulf Branch.
4. Mississippi Valley and Lake Branch.
5. Northwestern Branch.
6. Southwestern Branch.
7. Pacific Coast and Mountain Branch.

A form of constitution and by-laws is also submitted, providing that membership in such branch associations shall be entirely voluntary, as in this association, but shall be limited to those who are in good standing in their respective county and state associations. Such officers shall be elected as may be necessary and, in every way, each branch will have the fullest possible autonomy consistent with its relations to the state organization composing it.

As branch associations are organized, it is recommended that, in so far as possible, they arrange to hold their meetings in the fall, and at the same time and place as the meeting of the state association of the state in which the meeting is held. For instance, if the meeting of the Mississippi Valley and Lake Branch is to be held with the Kentucky State Medical Association in 1908, it is suggested that the scientific programs of the two bodies be merged for that year, the Kentucky house of delegates meeting separately, of course. The same arrangement would apply to other states from year to year until the meetings had gone around. The bulk of the attendance under such a plan would be from the membership of the state in which the meeting was held, as would be the case in any event, but there would always be a sufficient attendance of the leaders from other states to add greatly to the interest of the state meeting for that year, and in time this advantage would be extended to each state embraced in the branch.

In making the assignment of states, existing interstate organizations, natural affiliations and facilities for travel, were considered so far as known and possible, but it should be understood that what we suggest is tentative and somewhat as a basis for discussion. Members of the House from the various states and sections, better advised, may be able to suggest changes and shifting of states which will make the plan more acceptable.—*From the Report of the A. M. A. Committee on Organization, Atlantic City.*

In the matter of the proposed branch associations, we recommend that this report on branch associations be referred to the state associations by the general secretary, with an urgent request for an expression of their views, to be presented to this association at the next annual meeting.—*Report of Reference Committee on Report of Officers as adopted by House of Delegates, Atlantic City.*

DR. GEORGE H. SIMMONS, SECRETARY-EDITOR, A. M. A.

The American medical profession is to be congratulated on the extraordinary influence for good brought about by this organization largely through the efforts of the secretary-editor, Dr. George H. Simmons. By virtue of my office I have been thrown in close association with Dr. Simmons, and I take this occasion to express publicly my high admiration for him and his work. His courage in fighting for the best interests of the profession as a whole, often at a personal sacrifice, must commend itself to every right thinking man.—*William J. Mayo, M. D., President's Address, Atlantic City.*

We sincerely commend, and heartily approve, the work of the general secretary as set forth in his report, and we believe that the growth of the association and the developments of *The Journal* and its plant are largely, if not entirely, due to his indefatigable efforts.—*Reference Committee on Report of Officers as adopted by the House of Delegates, Atlantic City.*

THE TREATMENT OF ERYSIPELAS.

Candler (*American Journal of Clinical Medicine* for October) orders epsom salt compresses on at once and exhibits every half hour for six doses blue mass and soda, gr. 1-4, podophyllin, gr. 1-6; two hours after the last dose a saline draught (magnesium sulphate) is taken and, as soon as resultant stools have been disposed of, a free enema of any good alkaline antiseptic solution is given. The liq. antisept. comp. of the U. S. P. is excellent. Use one ounce of this formula to the quart of water.

Every hour gr. 1-6 of calcium sulphid is given, echinacea, gr. 1 (or ten minims of the sp. tr.), being added to each third dose. Gr. 1-67 of digitalin, gr. 1-134 of aconitin and gr. 1-67 of pilocarpin are exhibited to a child of twelve every hour for three or four doses (or till temperature falls one or two degrees and the skin is moist), then the interval between doses is lengthened to three hours. Smaller doses (in solution) are given at same intervals to younger patients.

At least four times daily ten grains of the triple sulphocarbolates are given in solution —this for the first two days, after that half such doses will suffice. The enema is repeated daily and the blue mass and soda with podophyllin is given every third night; a saline draught is ordered each morning.

Carefully cleanse the affected area with warm boric acid solution and then with a camelshair brush paint the entire margin—and for an inch beyond—with pure carbolic acid. In one minute neutralize with alcohol, dry with clean cotton and reapply the first dressing. This procedure will, if properly performed upon a patient under effective medication, put a prompt stop to the infection.

CHRYSOPHANIC ACID.

C. J. Fox, Hartford, Conn. (*Journal A. M. A.*, June 23), reports cases of psoriasis, eczema, herpes circinatus and sycosis successfully treated with chrysophanic acid. In the first-named disease, he considers that it exerts a specific action, limited it may be, but unquestionable. In sycosis after epilation the acid seemed to enter the pustules and convert their contents into a white substance, doubtless effectually destroying the parasite. A favorite formula is given as follows: Chrysarobin, 10 parts; salicylic acid, 10 parts; ether, 15 parts; collodion to make 100 parts. This preparation, however, should be used with caution and discontinued if the skin is irritable and the congested patches increasing in number. He does not ordinarily use the remedy on the scalp or face, as it discolors the hair and may cause conjunctivitis if it gets to the eyes.

The Pennsylvania Medical Journal.
PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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Dauphin—Charles M. Rickert, M. D., Harrisburg
Delaware—Ellen E. Brown, M. D., Chester
Elk—J. C. McAllister, M. D., Ridgway.
Erie—George W. Schlindwein, M. D., Erie.
Fayette—Owen R. Altman, M. D., Uniontown
Franklin—John J. Coffman, M. D., Scotland.
Fulton—George M. Robinson, M. D. McConnellsburg.
Greene—James C. Knox, M D., Waynesburg.
Huntingdon—H.C. Frontz, M D., Huntingdon.
Indiana—H. B Buterbaugh, M. D., Indiana.
Jefferson—Harry B. King, M. D., Reynoldsville.
Lackawanna—William E. Keller, M. D., Scranton.
Lancaster—P. P. Breneman, M. D., Lancaster.
Lawrence—B. E. Sankey, M. D., New Castle.
Lebanon—Ezra Grumbine, M. D., Mt. Zion.
Lehigh—H. Herbert Herbst, M. D., Allentown.
Luzerne—James W. Geist, M. D., Wilkes-Barre.
Lycoming—William E. Delaney, M. D., Slate Run.
McKean—James Johnston, M. D., Bradford.
Mercer—Charles I. Walker M. D., Sharon.
Mifflin—Walter H. Parcels, M. D., Lewistown.
Monroe—N. C. Miller, M. D., Stroudsburg.
Montgomery—Edgar S. Buyers, M. D., Norristown.
Montour—Cameron Shultz, M. D., Danville,
Northampton—Samuel S. Apple, M. D., Easton.
Northumberland—H. W. Gass, M. D., Sunbury.
Perry—L. M. Shumaker, M. D., Elliottsburg.
Philadelphia—R. Max Goepp, M. D., Philadelphia.
Potter—E. H. Ashcraft, M. D., Condersport.
Schuylkill—George O.O. Santee, M. D., Cressona.
Snyder—A. J. Hermann, M. D., Middleburg.
Somerset—H. C. McKinley, M. D., Meyersdale
Susquehanna—C. C. Halsey, M. D., Montrose.
Tioga—A. H. Glover, M. D., Knoxville.
Union—Oliver W. H. Glover, M. D., Laurelton.
Venango—E. W. Moore, M. D., Franklin.
Warren—Mary C. Conant, M. D., Warren.
Washington—J. B. Donaldson, M. D., Canonsburg.
Wayne—Louis B. Nielsen, M. D., Honesdale.
Westmoreland—Myers W. Horner, M D., Mt. Pleasant.
Wyoming—George M. Kinner, M. D., Mehoopany.
York—G E. Holtzapple, M. D., York.

All communications should be addressed to the Pennsylvania Medical Journal. Athens, Pa.

The Medical Society of the State of Pennsylvania does not assume responsibility for any statements or opinions published in this journal.

Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

Athens, August, 1907.

OPSONOTHERAPY.

The term opsonin has been coined to designate hypothetical substances in blood serum that possess the property of affecting bacteria in such a manner as to favor their encompassment by phagocytic leukocytes. The activity of the phagocytes is estimated by counting the number of bacteria contained within them when equal parts of blood and of suspension of bacteria are brought together in a test tube and kept at body-temperature for fifteen minutes. The leukocytes retain the power of taking up bacteria if separated from the blood serum and repeatedly washed in physiologic salt solution with the aid of centrifugation and subsequently again mixed with fresh blood serum, but they lose it if the serum be heated to 60 degrees C., or if washed corpuscles and bacteria are brought together in an indifferent medium, such as physiologic salt solution. It has been demonstrated further that the substance on which this action depends exerts its influence on the bacteria and not on the leukocytes. It is present in the blood serum in only limited amount, for serum permitted to remain long in contact with bacteria loses its opsonic power and behaves like an indifferent medium. There are, however, bacteria that resist phagocytosis even in the presence of blood serum, and others that undergo phagocytosis without the preparatory aid furnished by the serum.

Phagocytic activity with respect to a given bacterium can be increased by previous inoculation with sterilized cultures of the same microörganism. The degree of such activity, or the opsonic index, is determined by comparing the number of bacteria taken up by the leukocytes in the blood under observation with the number taken up by the leukocytes in normal blood. This diminishes in the twenty-four hours following inoculation, and a so-called negative phase results. The latter is in turn quickly succeeded by an increase in the opsonic index, or positive phase. By repeating the inoculations at suitable intervals the opsonic index may be materially increased.

There is some doubt as yet as to whether opsonins are specific or not, the evidence on this point thus far being inconclusive.

The opsonic index has been found low especially in the presence of local infections, and it is in these particularly that successful therapeutic results have been obtained. Staphylococcus infections have yielded the best results, and there is considerable experience in favor of the opsonic method in the treatment of furunculosis, acne and sycosis. E.

INSECTS AS FACTORS IN THE TRANSMISSION OF DISEASE.

The question of the distribution of disease by the agency of insects is of vital importance, not only to scientists and medical men, but also to the agriculturist and horticulturist. Persons interested in the earlier allusions to the rôle of insects as carriers of disease will find interesting reading in Kelly's Walter Reed and Yellow Fever, and in Nuttall's Monograph in the Johns Hopkins Hospital Reports for 1899. Athanasius Kircher, 1659, wrote "Flies carry the plague." Ambroise Paré, in his description of the battlefield of St. Quentin in 1557, says, "Flies rose up from the dead . . . and where they settled they infected the air and brought the plague with them." In 1871 Dr. Joseph Leidy of the Academy of Natural Sciences of Philadelphia, stated emphatically that in his opinion the common house fly was responsible for the spread of hospital gangrene during our civil war. In 1880 Dr. Patrick Manson demonstrated that the mosquito acts as the intermediary host of the *Filaria sanguinis hominis* in the production of disease. In 1848 Dr. J. C. Nott of Mobile wrote, "How much more easily may we account for the spread of yellow fever from a focus, by the insect theory than by the malarial hypothesis." In 1881 Dr. Carlos J. Finley of Havana read before the Royal Academy of Havana a paper entitled "The Mosquito Hypothetically Considered as the Agent of Transmission of Yellow Fever." He says, "The transmission might be effected by the virulent blood which the mosquito has sucked," and, "The same blood that the mosquito discharges as excrement, after having bitten a yellow fever patient, might be dissolved in drinking water, whereby the infection might be conveyed." Dr. A. F. A. King, in the *Popular Science Monthly* for September, 1883, expressed his belief that mosquitoes are the agency by which malaria is conveyed to human beings. It remained for our lamented Dr. Walter Reed and his associates to definitely prove that the cause of yellow fever is the bite of the mosquito, *Stegomyia fasciata.* It has also been proved that malarial fever is usually, if not always, caused by the bite of a mosquito, *Anopheles maculipennis.*

It is the common house fly that most of us have to fear. A single fly can carry millions of germs on its feet and probosis. Flies settle on material expectorated, vomited or passed from the bowels or kidneys by persons suffering with tuberculosis, typhoid fever, cholera or the plague, and then light on the food or tableware, thus often infecting those who least expect the danger. A female fly will lay about one hundred and twenty eggs and they are usually deposited in fresh horse manure, though sometimes in other excrement, in spoiled and moist food stuffs, decaying meats, cut melons, and dead animals. The eggs hatch into maggots in about eight hours and after four days the maggots change into pupæ. The pupa state lasts for five days and from it the perfect fly emerges. Thus they go through their total life-round inside of ten days and this provides for numerous generations in a summer.

Through the carelessness of a nurse or the lack of an attendant, flies often rest on the lips of invalids and then fly away to light on the food of man or animal. How can we prevent it? By sanitary measures that are after all only strict cleanliness. Horse manure, when possible, should be immediately placed in receptacles that will not permit flies to lay eggs in it. The floors of stables should be of such a character that will prevent the accumulation of this material in cracks. Flies love sunshine and will not voluntarily go into dark places, therefore it is incumbent to have all privies and sinks absolutely dark in the places devoted to excrementitious matter. Food should be screened from them, and screens and care should as far as possible keep flies from our dwellings.

Young mosquitoes are aquatic animals, and live in pools of stagnant water. The eggs are laid on the surface of the water and hatch in less than a day. The young come to the surface frequently for air to breath. These breeding places should be filled up or drained. The pouring of an ounce of kerosene on fifteen square feet of water surface will kill the female as she strikes the water to lay her eggs, and also the young as they come to the surface to breath. The mosquito is mostly nocturnal and it is necessary to protect ourselves at night by appropriate screens and netting.

H. S.

THE JOURNAL AND ITS ADVERTISEMENTS.

The *Pittsburg Medical Review* was probably the first medical journal to refuse admittance into its advertising pages of proprietary medicines. The first number, December, 1886, contained the following: "In the editorial department such questions as merit the attention of the profession will be discussed candidly and fearlessly. . . . Finally the advertising pages will contain nothing that the strictest ethics can condemn." In June, 1897, the *Review* became the PENNSYLVANIA MEDICAL JOURNAL, the official organ of the Medical Society of the State of Pennsylvania, Dr. Adolph Koenig remaining as editor and publisher. The same ethical standard was continued by Dr. Koenig until the JOURNAL came under the present management in October, 1904. The *California State Journal of Medicine* for November, 1904, in speaking editorially of Dr. Koenig's retirement, said:

> Seven years ago he undertook what no one believed could be done: the publication of an absolutely clean and ethical medical journal that should be entirely free from all question of commercial control. He started the first state society journal, and, for seven years, edited and published the only medical journal ever published in this country which has never contained one line of questionable advertising. Thus his example has been in two directions, and enormously valuable. He demonstrated that a state society could successfully publish its transactions in journal form, and he also showed in no questionable manner that such a journal can be absolutely clean and independent.

At the Atlantic City Session of the American Medical Association, June, 1907, the following resolutions, regarding the work of the Council on Pharmacy and Chemistry, were presented by the reference committee on reports of officers and were unanimously adopted by the House of Delegates.

Whereas, The Council on Pharmacy and Chemistry, after examining many hundreds of preparations, has officially announced its approval of a large number of such preparations; and

Whereas, We believe that the editors of many medical journals in this country, both official organs of state associations and privately owned journals, are desirous of coöperating in the work of freeing the medical profession from the nostrum control; therefore, be it

Resolved, That this Association most earnestly requests all medical journals to refuse to aid in promoting the sale of preparations which have not been approved by the Council, by refusing advertising space to such preparations; and be it further

Resolved, That we most earnestly request the moral and financial support of our members for those medical journals, whether privately owned or controlled by medical organizations, which disregard commercialism and stand firm for honesty and right dealing, thus sustaining the Council in its greatest work for the medical profession.

Since January of last year the JOURNAL has accepted advertisements of a few proprietary remedies that furnished formulas for publication and refrained from making exaggerated therapeutic claims. The editor, however, has not been able to satisfy himself at all times that the formula given was correct or that the therapeutic claims made were not exaggerated, and gradually the contract for one advertisement and another has been canceled. This month the JOURNAL cancels one more contract, and from now on no advertisement of any proprietary remedy will be found in our advertising pages that has not been approved by the Council on Pharmacy and Chemistry. The Medical Society of the State of Pennsylvania and its JOURNAL will continue to coöperate "in the work of freeing the medical profession from the nostrum control." S.

MEETING PLACE FOR 1908.

The committee on transportation and place of meeting will receive invitations from county societies desiring the 1908 meeting of the Medical Society of the State of Pennsylvania. Invitations should be mailed to the chairman not later than September 16, so that the committee may make its report to the House of Delegates at the Reading session.

ALBERT M. EATON, Chairman,
2017 N. Thirteenth Street, Philadelphia.

SHALL OUR SOCIETY JOIN THE ATLANTIC COAST BRANCH OF THE A. M. A?

Our members, and especially the members of the House of Delegates, are requested to read the report of the American Medical Association Committee on Organization, recommending the formation of branch associations. This report will be found on a previous page of this number of the JOURNAL. It will be noticed that the recommend of this committee was referred to the several state societies for action, and it is probable that this matter will be considered by our House of Delegates at Reading. For this reason it is desirable that the delegates should give the matter early consideration. S.

HAVE YOU ANY NEW BUSINESS TO PRESENT AT THE READING SESSION?

If any one intends to introduce new resolutions at the Reading session it will facilitate the proper disposal of such business if he will give a brief notice of such intention in the JOURNAL for September, so that the members of the House of Delegates can give the subject consideration before going to Reading. The officers of the society are planning to have the business that is likely to come before the House of Delegates so systematized and promptly brought to the attention of the members of the House that all the business can be thoroughly considered and properly disposed of. In this way it is hoped that the members of the House may be enabled to attend most of the scientific meetings without neglecting the business of the society. S.

A PRESIDENT OF A COUNTY SOCIETY A MEMBER OF THE HOUSE OF DELEGATES.

Each county society is entitled to one member of the House of Delegates for each one hundred members or fraction thereof. In addition to this the president of a county society is an ex-officio member of the House. Therefore, each society, no matter how small, is entitled to two representatives in the legislative body of the state society. If a society is to be fully represented the president himself must be in attendance as no one can be substituted in his place. One who has been honored by his county society by being elected its presiding officer should feel under obligations to serve his society not only at home but at the session of the state society. Each society should elect two alternates for its regular delegate, so as to make it the more certain that it will be fully represented at Reading. S.

INSURANCE FEES.

A circular letter to the Medical Examiners of the Equitable Life Assurance Society reads as follows:—

> New York, July 23, '07.
>
> Dear Doctor:—
>
> By order of the President, our former flat fee of five dollars ($5.00) for each full examination, irrespective of the amount, will be restored on and after August 1st., 1907.
>
> All extra allowances under our present reduced fee schedule will be abolished on the above date.
>
> A fee of five dollars ($5.00) will be allowed for microscopic examinations made in the field, when required. (See Medical Service Rules). Very truly yours,
>
> John Warren, M. D.,
> Chief Medical Director.

This action of one of the older and larger life insurance companies probably foreshadows the action of other companies that have been paying the reduced rate.

A. R. A.

DEATH OF DR. THOMAS M. LIVINGSTON.

Thomas Moore Livingston, M. D., who has served the Medical Society of the State of Pennsylvania as trustee for four years, died at his home in Columbia, July 13. Dr. Livingston attended the Bedford Springs Session, and took an active interest in the scientific and business work of the society, though it was noticeable that he was in failing health. His report to the House of Delegates as councilor for the Second District showed perhaps the most systematic work of any of the councilors. His modest, sympathetic and helpful presence will be very much missed at Reading and future sessions. S.

BANQUET FOR COUNTY SECRETARIES

It will be seen by reference to the preliminary program of the Reading session, printed elsewhere in this number of the Journal, that the secretaries of the county societies are to have a banquet and conference Tuesday afternoon, the expenses for the same to be paid by the state society. Those who were fortunate enough to be present at the banquet at Bedford Springs last year will be anxious to be in attendance, and it is hoped that the secretary of each society will make a special effort to be present at Reading. S.

Changes in Membership of County Societies.

The following new names have been reported from June 1 to August 1: William H. Gardner, David M. Perkins, Allegheny; Thomas S. Anderson, Scott Applewhite, Marcus E. Baldwin, Sidney Smith Carrier, Thomas Evans, Jr., Charles C. Gans, Atlee D. Mitchell, Charles C. Moyer, James C. Ralston, John Reid Simpson, Sidney G. White, Valentine J. Yorty, Pittsburg; Henry S. Isaacs, Braddock; Robert C. Johnston, Springdale; James C. Fish, Beaver Falls; Milton L McCandless, Rochester; Fred B. Wilson, Beaver; Chester LeRoy Barry, Oxford; Robert W. Howard, Atglen; George B. Umsted, Phoenixville; Joseph Cohen, Berwick; W. S. Russell, Mt. Holly Springs; Herbert F. Gross, Edwin A. Nicodemus, M. M. Ritchie, Harrisburg; F. S. Earnest, Hummelstown; E. Marshall Harvey, Media; Walter Webb, Sharon Hill; Ambrose W. Thrush, Greenvillage; Ray McElvey Alexander, Robinson; John Lambie, Blacklick; Harry B. Neal, Indiana; William H. Nix, Homer City; Charles E. Rink, Shelocta; C. M. Smith, Plumville; John J. Moore, Reynoldsville; Oscar E. Henritzy, Slatington; Joseph M. Weaver, Allentown; Milton E. Weaver, Limeport; Melvin H. Smithgali, Lairdsville; Addison E. Cattron, Sharpsville; H. C. Lawton,Yeagertown; Bruce

P. Steele, McVeytown; Harvey O. Rohrbach, Freemansburg; Gustavus C. Bird, Eleanore F. Boulton, Robert Boyer, Paul F. Brewer, Arthur Jackson Brewe, Thomas J. Buchanan, William M. Bunce, William B. Cadwallader, Eugene J. Chassagne, George S. Crampton, William Thomas Dempsey, Arthur R. Dray, Thomas B. Earley, J. Murray Ellzey, Joseph S. Evans, Jr., William F. Guilfoyle, William D. W. Hall, Edward B. Hodge, Simon Kimmelman, Norman L. Knipe, Francis B. McDowell, Oliver F. Mershon, Edwin B. Miller, George H. Nofer, M. Frasier Percival, Davis Bruce Richards, Mary J. Rochelle, J. Henry Schaeffer, Philip Atlee Scheaff, Francis E. Stewart, Katharine A. Williamson, Philadelphia; Oscar J. Carlin, Merchant C. Householder, Joseph G. Kramer, Pottsville; Roy H. Renn, Tremont; E. E. Wiesner, Tamaqua; Franklin B. Louderbaugh, Addison; Henry A. Zimmerman, Hollsopple; E. Augustus Kuhns, Emlenton; Minnie K. Mount, Oil City; Loyal G. Lutz, Roscoe; David Clifford Farquhar, Monessen; Horace G. Painter, R. E. Lee McCormick, Joseph L. Sowash, William H. Taylor, Irwin.

Alphens A. Bush (Bellevue Hosp. Med. Coll., '75) died at his home in Pittsburg, May 30, from angina pectoris, aged 57.

Cornelius E. VanHorne (West. Penn. Med. Coll., '96) of Pittsburg, died at Conneaut Lake, June 2, from heart disease, aged 39.

Edward John Hadfield (Jeff. Med. Coll., '90) died at his home in Phoenixville, July 3, from paresis complicated by nephritis, aged 39.

Samuel S. Hoop (Univ. of Tennessee, '01) of Andover, was shot and killed, May 25, aged 45.

Thomas M. Livingston (Bellevue Hosp. Med. Coll., '72) died at his home in Columbia, July 13, from cancer of the bowels, aged 63.

Henry E. Muhlenberg (Univ. of Penn., '71) died at his home in Lancaster, June 17, from heart disease, aged 64.

Charles E. Cadwallader of Philadelphia, died in London, June 12, from valvular disease of the heart, aged 67.

Francis Horace Getchell (Jefferson Med. Coll., '71) died at his home in Philadelphia, June 27, from spinal injuries sustained in a fall, aged 71.

James William MacIntosh (Jefferson Med. Coll., '98) of Philadelphia, died June 24, from tuberculosis, aged 36.

Kimber R. Clever (Medico-Chirurgical Coll., '96) of Friedenburg, died at the Pottsville hospital, July 18, following an operation for appendicitis.

Jesse A. Spence has resigned from the Allegheny County Society.

John H. Wahl has resigned from the Berks County Society.

Roy L. Stackpole has withdrawn from the Butler County Society.

Charles P. Bryant is no longer a member of the Fayette County Society.

Jacob P. Bottenhorn has resigned from the Jefferson County Society.

T. Lee VanGiesen has resigned from the Warren County Society.

William C. Bryant has removed from Pittsburg to Fredericksburg, Va.

John G. Burke has removed from Pittsburg to Lewisburg, Ohio.

David Mackey has removed from Lewisville to Oxford.

Oliver H. Jackson has removed from Conneaut Lake to Meadville.

Samuel E. Mowery has removed from Lisburn to Mechanicsburg.

Samuel Reynolds has removed from Reynoldsville to Warren.

Henry A. Litzenberger has removed from Orefield to Walnutport.

Judson M. Burt has removed from Rhone to Erie.

William H. Deardorff has removed from Freeland to Philadelphia.

Charles T. W. Seidel has removed from Sharpsville to Sandy Lake.

William H. Kasten has removed from Chapman's Quarries to Lansford.

B. F. R. Clark has removed from Narberth to Philadelphia.

Harry B. Knapp has removed from Philadelphia to Wiconisco.

William H. King has removed from Philadelphia to Narberth.

John B. Shober has removed from Philadelphia to Bar Harbor, Me.

Harry C. Hoffman has removed from Meyersdale to Connellsville.

Present membership 4885.

S.

LOSING STRENGTH.

"An' how's yer wife, Pat?"

"Sure, she do be awful sick."

"Is ut dangerous she is?"

"No, she's too weak t' be dangerous anny more!"—Cleveland Leader.

State News Items.

MARRIED.

Dr. John A. Sherger and Miss Kreamer, both of Harrisburg, June 12.

Dr. Myer Brody, Philadelphia, and Miss Anna Bialosky, Cleveland, Ohio, June 25.

Dr. Robert Morrison, Sheraden, and Miss Rosetta Ryan, Cambridge Springs, August 7.

Dr. James Wade Elphinstone and Miss Mary Robinson, both of Allegheny, June 27.

Dr. Wallace R. Hunter, Erie, and Miss Daisy Baldwin-Amidon, New York City, June 12.

Dr. LaBarre Jayne Leamy, Philadelphia, and Miss Beatrice P. Magill Dolphin, June 29.

DIED.

Dr. Mary Brewer (Univ. of Iowa, '94) in Philadelphia, June 20.

Dr. H. K. Hoy (Hahnemann Med. Coll., '81) in Altoona, July 5, aged 54.

Dr. Alfred Wynkoop (Univ. of Pennsylvania) in Philadelphia, July 17, aged 87.

Dr. George A. Sweeney (Univ. of Pennsylvania, '98) in Chester, July 8, aged 33.

Dr. Christian M. Hoffman (Jefferson Med. Coll., '62) in Sinking Springs, July 6, aged 73.

Dr. William C. Stewart (Baltimore Med. Coll., '01) in Johnetta, July 12, from diabetes, aged 36.

Dr. Thomas S. E. Pyle (Eclectic Med. Coll., Philadelphia, '68) in Allensville, from heart disease, June 29, aged 55.

Dr. A. Harold Myers (Univ. of Maryland, School of Medicine, '82) in Rochester, June 10, from neurasthenia, aged 51.

Dr. Hiram Daniel Enoch (Univ. of Pennsylvania, '63) in Washington, June 16, from cancer of cecum, aged 72.

Dr. Henry W. Fulton (Hahnemann Med. Coll., '72) of Pittsburg, in Atlantic City, June 23, from heart disease, aged 69.

Dr. Henry S. Hutchinson (Univ. of Pennsylvania, '07) is reported to have committed suicide in Lansdowne, June 19, aged 25.

ITEMS.

Dr. and Mrs. A. O. J. Kelly sailed for Europe, July 13.

Dr. C. E. Allison, Elysburg, is registered at the Philadelphia Polyclinic.

Dr. M. M. Rankin, Ridgway, has been appointed U. S. Pension Examiner at that place.

Dr. James S. Swartzwelder has moved from Needmore, Fulton county, and located in Mercersburg.

Dr. Thomas B. Allison, Tarentum, became insane, July 23, as a result of the excessive heat.

Dr. John A. Barr, McKees Rocks, fell from a ladder last month, breaking a leg in two places.

Dr. Samuel W. Perry, New Castle, was injured July 19 by being thrown from his automobile.

The North Penn Clinical Society met in Souderton June 26, with fourteen physicians present.

Dr. Robert W. Clark, Venango, was injured July 8, by the explosion of turpentine which he was heating.

Dr. Mazyck P. Ravenel of Philadelphia has been elected professor of bacteriology in the University of Wisconsin.

Dr. and Mrs. C. J. Kistler, Lehighton, sail September 7 for Europe. The doctor will spend some weeks in the Vienna Clinics.

Dr. Samuel G. Dixon, commissioner of health, has supervision of the sanitation of the National Guard Camp at Mt. Gretna.

Dr. W. W. McCleary, Bellevue, and his son were injured July 21 in a collision in Riverview Park, and his trotting horse, valued at $1000, was killed.

Dr. R. Tait McKenzie, Philadelphia, was one of the delegates from the American School Hygiene Association to the International Congress School of Hygiene held in London August 5-10.

Dr. Arthur Hitchens, director of the antitoxin and vaccine laboratories of the H. K. Mulford Company, is in London engaged with Prof. E. E. Wright in the study of opsonins and vaccine therapy.

Dr. J. Thompson Schell has recently resigned the positions of clinical professor of pediatrics at Temple College, pediastrician to the Samaritan Hospital, and medical and surgical pediastrician to the Garretson Hospital.

The Cumberland Valley Medical Association will hold its fifth annual meeting at Blue Mountain Hotel, Pen-Mar, Md., Thursday, September 5. Dr. J. J. Coffman, Scotland, is the secretary, and Dr. A. R. Allen, Carlisle, will act as toastmaster.

Passed the State Board. Of the candidates examined by the Medical Examining Board in June, 328 have been recommended for licensure, and thirty-nine failed. In addition to these, twenty-eight were passed by the Homeopathic State Board, and ten by the Eclectic Medical Board.

Free Ice for Philadelphia Poor. On July 24 the Department of Health and Charities began the distribution of ice to sick children and poor families during the heated season. The tickets are supplied to the forty-seven district physicians for distribution. Only $500 is available for this summer.

The Medico-Chirurgical College has planned to offer a preliminary year devoted to physics, chemistry, biology and modern languages, beginning this fall. While the course is optional, a special inducement is offered by the arrangement that for those entering during the session of 1907-8 the total fees for the five-year course will be the same as for those entering on the four-year course.

Department of Health, Vaccination. Drs. S. G. Dixon, S. T. Davis, Adolph Koenig, Leonard Pearson, and C. B. Penrose, and Mr. Lee Masterston attended a meeting of the Advisory Board of the State Department of Health, July 25. The following resolution was adopted:—

Resolved, That in the opinion of the advisory board and the commissioner of health, a person who has had the operation for vaccination faithfully performed three times, at intervals of two successive weeks, without success, is for the time being immune from smallpox, and, further, that under the present law persons who have a written certificate from a registered physician that two such attempts to vaccinate were faithfully performed and a second certificate from a physician of the State Department of Health, or of a board or bureau of health or sanitary committee of a city or borough, may be admitted to school for one year without violating the spirit of the law, the object of which is simply to prevent the spread of smallpox.

Reviews

RHYTHMOTHERAPY. A Discussion of the Physiologic Basis and Therapeutic Potency of Mechano-Vital Vibration, to Which Is Added a Dictionary of Diseases with Suggestions as to the Technic of Vibratory Therapeutics. By Samuel S. Wallian, A. M., M. D., President, American Medico-Pharmaceutical League, etc. Illustrated. Price $1.50 net. postage ten cents. Chicago: The Ouellette Press, 1906.

This is practically an enumeration of all the ills with which the human race is afflicted, for the cure of which rhythmotherapy is recommended. G. M. K.

TEXT-BOOK ON PRACTICE OF GYNECOLOGY. By William Easterly Ashton, M. D., LL.D., Professor of Gynecology in Medico-Chirurgical College and Gynecologist in Medico-Chirurgical Hospital, Philadelphia. With 1057 new line drawings illustrating the text, by John V. Alteneden. Third edition. Revised and enlarged. W. B. Saunders Company, 1906.

Here is a gynecology which eminently meets the wants of the physician. It is not all surgery. Clear in its description of diseases and practical in treatment, the volume is most notable in gynecological literature.

As it is written largely upon the basis of the author's wide clinical experience, it is explicit and authoritative, and avoids the perplexities of a multiplicity of methods.

In this edition the physician can readily place himself on the plane of the most advanced knowledge both in theory and practice. McA.

THE TECHNIC FOR MODERN OPERATIONS FOR HERNIA. By Alexander Hugh Ferguson, M.B., M.D., C.M., F.T.M.S., Professor of Clinical Surgery, Medical Department of the University of Illinois; Professor of Surgery at the Chicago Post-graduate Medical School; Surgeon to the Chicago and Postgraduate Hospitals, etc. Illustrated. Chicago: Cleveland Press, 1907.

To the general surgeon this work on hernia is particularly interesting and helpful. Dr. Ferguson goes into the subject exhaustively as regards its surgical aspect. The varieties of hernia are described and illustrated. A most commendable feature of the book is the description of the various operations for inguinal and femoral hernia. Dr. Ferguson's own operations for these conditions are deserving of most thoughtful consideration as in his hands and those of the Mayos the results have been highly satisfactory. The illustration, type and paper are fully abreast with recent American publications. C. H. O.

A TEXT-BOOK OF OBSTETRICS. By Barton Cooke Hirst, M. D. Fifth Edition. Revised and Enlarged with seven hundred and sixty-seven illustrations, fourteen different colors. Philadelphia: W. B. Saunders Company.

The great demand for this book manifested by the medical profession has necessitated the publication of this fifth edition. This work is too well known to require any special commentation at the hands of the reviewer. It stands to-day as it did ten years ago, the recognized text-book of obstetrics for both students and practitioners. Its real value depends not only upon the excellent illustrations but also on the easy diction displayed by the author whereby its usefulness is as great for a book of study as for a book of reference. F.

PATHOLOGY. General and special. A Manual for Students and Practitioners. By John Stenhouse, A. M., B. Sc. (Edin.), M. D. (Tor.), and John Ferguson, A. M., M. D. (Tor.). Series edited by Victor Cox Pedersen, A. M., M. D. Illustrated with sixteen engravings and a colored plate. Lea Bros. & Co., Philadelphia.

This little book is one of the Medical Epitome Series and is in keeping with the volumes which have been previously published. The series comprises twenty-three volumes of which twenty are now published. The authors have shown rare foresight in preparing a book which is small, compact and contains all the essential facts in the study of pathology. It is a book which should be on every physician's desk. F.

TRUTH AND POETRY CONCERNING URIC ACID. An Epitome of the Present State of Knowledge of the Subject as Presented in the Literature. By Lewellys F. Barker, M.D. American Medical Association Press, Chicago. 1905.

This is a reprint from the editorial columns of the *Journal of the American Medical Association*.

Dr. Barker has very concisely reviewed the work of other investigators in the field of uric acid research. He thinks it may be helpful in exposing a fallacy that has been used to great advantage by the nostrum mongers in exploiting their so-called uric acid solvents.

What is acutally known regarding the source and formation of uric acid, and its pathologic physiology is told in a convincing manner. J. T. H.

TUMORS: INNOCENT AND MALIGNANT. Their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S., Surgeon to and Member of the Cancer Investigation Committee of the Middlesex Hospital. Fourth edition. 675 pages, 355 engravings. Chicago: W. T. Keener & Company, 1907. $5.00 net.

A glance at the numerous illustrations in this book might lead the careless observer to think it a book on freaks and monstrocities, but a careful reading shows it to be a worthy treatise on adventitious growths. Concerning cancer the author says in the preface, "The widespread interest manifested in this scourge of mankind has induced me to adopt the suggestion of many critics and include an account of the prevailing but irreconcilable opinions held by competent men in regard to its origin. Nothing is known as to its cause, but the hypotheses, or guesses at the truth, concerning it are set forth in these pages." S.

THE DIAGNOSTICS OF INTERNAL MEDICINE. By Glentworth Reeve Butler, Sc.D., M. D. With five colored plates and two hundred and eighty-eight illustrations and charts in the text. Second Revised Edition. New York: D. Appleton & Company.

In the revision of this work much care has been taken to bring the subject up to date and to add necessary material without increasing the bulk. The book has been written from the point of view of practical clinical work and occupies an unique position of usefulness in the twentieth century medical library. Seldom has there been a book presented to the medical profession of so much real value as this work on clinical diagnosis. The minor as well as the major facts connected in building up a diagnosis have been enunciated with great clearness, and the work comprises a handy counselor of value to a physician at all times. It is of service to the diagnostician, to the radiographer and to the laboratory student, and in it is found complete elaboration of all methods of examination which go to make up a perfect diagnosis. The publishers are to be commended for the excellence of the plates and the general style of the book. F.

DISEASES OF THE NERVOUS SYSTEM RESULTING FROM ACCIDENT AND INJURY. By Pearce Bailey, A. M., M. D. D. Appleton & Co., New York.

This volume is a revision of Accident and Injury which was published in 1893, and is printed from new plates. The author has covered thoroughly the study of nervous conditions resulting from injury and has elaborated a book of high, scientific value, not only to the general practitioner, but to the neurologist in particular. The work covers in detail the consideration of all traumatic affections of the nervous system and emphasizes the cases of malingering that almost defy detection. The subject is taken up in four parts: The Introduction; Organic Effects of Injuries on the Nervous System; Functional Effects of Injuries and Medical Considerations. The book is of particular value to the medical witness, inasmuch as it seems remarkably free from personal bias and its large number of illustrations and cases offers many valuable suggestions. The book is embellished with many excellent illustrations. The style of writing is excellent and a long bibliographical list is given. F.

THE NURSLING. The Feeding and Hygiene of Premature and Full-term Infants. By Pierre Budin, Professor of Obstetrics, University of Paris. Authorized Translation by William J. Maloney, M. B., Ch.B., Fellow of the Obstetrical Society of Edinburg. With an Introduction by Sir Alexander R. Simpson, M. D., LL.D., D.Sc., Emeritus Professor of Midwifery and Diseases of Women and Children, University of Edinburgh. One volume, illustrated with 128 diagrams, mostly in color, and with special appendices by the translator. Price $6.00. London: The Caxton Publishing Company; New York: Imperial Publishing Company, 1907.

This work represents a series of ten lectures on the varied problems investing the subject of infant feeding. The subject is presented not only with a view of artificial feeding but also to teach mothers "the sublime duties of motherhood."

In the introduction, by Sir Alexander R. Simpson, he says: "In this volume Professor Budin explains in ten lectures to his students the methods he has found successful for preserving the life and promoting the growth of the neonate. The first four concern the premature and the specially feeble; the other six have regard to the full-time child. The story he has to tell of his victorious battle with infantile mortality is of thrilling interest. It must arrest the attention not only of the physician, but of the philanthropist and the patriot. It is high time the tale should be told in the English tongue."

In no class of cases can the physician save life so surely and so frequently as in abnormally fed infants and hence it behooves him to fortify himself in every possible way to discharge his duties properly. With that end in view, he will find this work a source of information of unsurpassed accuracy and reliability. K.

ABDOMINAL OPERATIONS. By B. G. A. Moynihan, M. S., (London) F. R. C. S. Second Edition. Thoroughly Revised. Philadelphia: W. B. Saunders Company, 1906.

This volume is a second edition of the work published in 1906. The cordial reception of the first edition and the advance in technic in many abdominal operations, has required a large number of additions to the text, together with some revisions. The author has followed out his original purpose by describing only those operations which are common to the two sexes. The surgery of organs, such as the kidney and bladder, which is partly intraperitoneal and partly extraperitoneal, is not included nor are the various operations for hernia. He has wisely omitted a detailed reference to any mechanical appliance, button or bobbin, for intestinal anastomosis. The work covers in detail those operations on the stomach and intestines which have done so much to advance surgery to its present high plane. Of particular interest is the detailed account of technic employed by Mayo, Dupuytren and others in performing partial gastrectomies. The consideration of liver surgery is most complete and accompanied by a series of interesting statistics. Nothing has been left unsaid in describing the various methods of doing enterectomies and the author has brought out the simplicity and effectiveness of the Connell stitch. The ubiquitous appendix comes in for its share of attention, while Weir's operation for appendicostomy has been thoroughly handled. The indications for this operation are clearly set fourth and its use in the treatment of amebic dysentery is thoroughly emphasized. Finney's operation is thoroughly described and the author describes a slight modification by use of his clamps. The work is a credit to the publishers, containing plates superior to most books of foreign authorship and the book holds an unique sphere of usefulness to the surgical profession. F.

A TEXT-BOOK OF DISEASES OF WOMEN. By Barton Cooke Hirst, M. D. Second Edition. Rewritten and Enlarged with seven hundred and one illustrations, many of them in colors. Philadelphia. W. B. Saunders Company.

This book on the diseases of women has been prepared as a companion volume to the author's Text-book of Obstetrics, the two volumes covering the whole subject of Gynecology.

The merits of the first edition are so thoroughly appreciated by the medical profession that little need be said of this recent publication. The value of the work has been enhanced by the addition of fifty-seven pages of text, by the introduction of forty-seven new illustrations and the exclusion of thirty of the old illustrations. In the new matter added to the text the author has kept thoroughly abreast of progress but has introduced only those facts which have been demonstrated to be of permanent value. To touch in detail upon all the subjects handled by the author or to endeavor to emphasize the numerous merits of the work would be futile. Suffice it to say, that the subject has been exhaustively handled and the second edition possesses the reputation of the former one of being an authority upon this subject. F.

DIET IN HEALTH AND DISEASE. By Julius Friedenwald, M. D., and John Ruhräh, M. D. Second Revised Edition. 728 pages. Philadelphia: W. B. Saunders Company, 1906.

The first chapter is on the chemistry and physiology of digestion, the whole subject being thoroughly and intelligently treated. Every practician should review such studies frequently.

Then comes classes of foods, animal, vegetable, fruits and nuts, fungi, sugars, spices and condiments, fats and oils, salts. Numerous tables giving the composition of foods add much to the value of this chapter.

The third division takes up beverages and stimulants, including water, mineral waters, tea, coffee, cocoa, and the various alcoholic beverages. Twenty-one pages are devoted to a very fair review of alcohol. A valuable chapter treats concentration of food, preservation of food, artificial foods, cooking, diseases resulting from improper food, and food adulteration. Fifty pages are given to infant feeding, and several chapters to diet for special conditions.

The greater part of the work is devoted to diet in disease. Numerous hospital and prison dietaries are given in full, as well as palatable receipes for various conditions. These are of great value though of course the physician, the student and the nurse must remember that to be successful one must treat each patient as an individual and not as one of a few definite classes. L. F. P.

ATLAS AND TEXT-BOOK OF HUMAN ANATOMY. By Johannes Sobotta, Edited with additions by J. Playfair McMurrich, A. M., Ph.D. Volume I. Bones, Ligaments, Joints and Muscles, With three hundred and twenty illustrations, mostly in colors. Philadelphia: W. B. Saunders Company.

With a surfeit of works in the medical book market to-day, many of which are unworthy the attention of a reviewer, it is a real pleasure to find a book on anatomy that demands the unanimous attention of the medical profession. The study of anatomy to-day, as it was centuries ago, is the real basis for a medical education. The descriptive part of it is learned only when one can call up a mental picture of the part in question, and volumes of description will do less to furnish a correct picture than will a single dissection or the inspection of an accurate illustration. This is especially true as regards relational anatomy. Without an accurate knowledge of the relation of parts, the student or practitioner will find himself sadly at sea in his application of anatomy to diagnosis and treatment.

The editor has accomplished a great work in presenting to English speaking students and practitioners an atlas complete with accurate illustrations and a thorough, though concise, descriptive text. The nomenclature has been revised to correspond with that in use in this country. This first volume has been compiled as an atlas especially adapted for use during dissection and the illustrations have consequently been arranged to conform to the usual methods of instruction in anatomy. Multicolored lithography has been employed throughout and has enhanced manyfold the usefulness of the book. The illustrations are unusually clear and true to nature, and to the student of osteology this work will prove a boon. The subject of myology has been exhaustively handled and the magnificent illustrations enable one to study the anatomy of a part as easily as though looking upon the dissected subject. It is indeed a book of real value, not only to the student obtaining his first insight into the marvelous structure of the human body but to the surgeon and practitioner as well, and the excellence of the work bespeaks for it a hearty reception at the hands of the medical profession. F.

THE PRINCIPLES AND PRACTICE OF DERMATOLOGY. Designed for Students and Practitioners. By William Allen Pusey, A. M., M. D., Professor of Dermatology in the University of Illinois; etc. With one colored plate and 367 text illustrations. 8vo, pp. xxv., 1021. New York: D. Appleton and Company, 1907.

Dermatology is one of the branches of medicine with which the general practitioner should be intimately familiar. There are many disorders of the skin that are expressions of constitutional disturbance, correction of which is the prerequisite to cure; while the largest number no doubt represent purely local affections and are amenable to topical therapeutic measures. The diseases of the skin, like those of other organs and tissues, are naturally best studied clinically, but in both instances observation may be profitably supplemented by reading, and great aid is afforded by faithful illustration. The latter conditions are satisfactorily provided in the work of Dr. Pusey. The subject is considered in two parts, namely, (1) the principles and (2) the practice of dermatology. The former deals with questions of anatomy, physiology, etiology, pathology, symptomatology, diagnosis, treatment and classification, while the latter is devoted to a description of the various affections of the skin. These are taken up under the heads of hyperemias, angioneurotic dermatoses, inflammations, dry scaly inflammatory dermatoses, hemorrhages, infectious diseases of the skin, dermatoses due to animal parasites, hypertrophies, atrophies, anomalies of pigmentation, neuroses, new growths, diseases of the appendages of the skin, diseases of the mucous membranes. The text is clear and concise, the type readily legible. The illustrations are on the whole excellent, although some are lacking in definition, while a number would be improved if they were colored after nature. There is an ample index. The book is a credit to author and publisher alike and should have a cordial reception. E.

MATERIA MEDICA AND THERAPEUTICS WITH ESPECIAL REFERENCE TO THE CLINICAL APPLICATION OF DRUGS. By John V. Shoemaker, M. D., LL.D., Professor of Materia Medica, Pharmacology, Therapeutics, and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College, Philadelphia, Physician to the Medico-Chirurgical Hospital. Sixth edition. Revised. F. A. Davis Company, 1906.

The demands for successive editions of this book is the best evidence of its value in meeting the needs of the practitioner. This is the sixth edition and is particularly timely. The recent revision of the U. S. Pharmacopeia and the many alterations in the strength of official preparations are fully met in this edition, together with the addition of much new material. In addition to the clinical application of drugs it covers the subject of animal extracts and serums. Part III., a portion of the book devoted to agents and means employed in medicine such as electro-therapeutics, massage, rest cure, diet in disease, hydrotherapy, mineral springs, climatotherapy, etc., is a treatise in itself. Dr. Shoemaker accomplishes his task fully and practically, making the book of value to the student as well as the practitioner. The book is well printed and opens well at any page which makes it easy for use. McA.

THE STANDARD FAMILY PHYSICIAN. A Practical International Encyclopedia of Medicine and Hygiene Especially Prepared for the Household. By Prof. Carl Reissig, M. D., of Hamburg, Germany; and Smith Ely Jelliffe, A. M., M. D., Ph.D., Professor of Pharmacognosy, Pharmaceutical Department, Columbia University, etc. With the Assistance of Many American and German Specialists in the Treatment of Diseases and Experts in Medicine. Two volumes, 8vo, pp. xxxviii., 1059. Buckram, $15.00; three quarters Morocco, $20.00. New York: Funk and Wagnalls Company, 1907.

In reviewing a work of the character of that before us the question at once arises as to the advisability or the need or the demand for it. No categorical answer can be given. Something may be said on both sides. On the one hand we have here admirably presented a vast amount of information in readily accessible and intelligible manner, while on the other hand it may be asked to what extent even an intelligent layman is capable of making useful and satisfactory application of it. The text is divided into two parts, the first of which begins with a brief description of the family physician and a statement of his relations to those that come under his care. Then follows a consideration in detail of the structures and functions of the human body and of the nature, causes, origin, course, termination, diagnosis and treatment of disease. The second part of the work comprises a more or less extended description of a wide range of topics arranged alphabetically. There is also an elaborate classified table of contents, a complete index, a brief account of poisons and their antidotes, tables of dosage, a useful glossary and a profusion of illustrations. The text is printed on heavy paper, in large type, well spaced. Many of the cuts are good, while others are not, but the illustrative plates are on the whole quite beautiful. The list of collaborators contains the names of many distinguished European and American clinicians.

E.

ANNALS OF SURGERY. A Monthly Review of Surgical Science and Practice. Edited by Lewis Stephen Pilcher, M. D., LL.D., with the collaboration of J. William White, Ph.D., M. D., Sir William Macewen, M. D., LL.D., and W. Watson Cheyne, C. B., F. R. S. J. B. Lippincott Co., Publishers, Philadelphia. $5.00 per year.

The Annals of Surgery for July might well be termed a symposium on end results following operation for cancer of the breast, giving as it does a splendid array of statistics by some of the leading surgeons of this country. Most of them agree that the three-year limit for recurrence is too short and should be extended to five or six years. They show that the best results are obtained when the supraclavicular glands are removed regardless of whether they seem to be involved or not.

Dr. William S. Halsted gives his results in 232 cases, showing that the slightest delay in operating is dangerous, and that in the early stages of breast cancer two in three are cured, while in late three in four succumb.

Concerning cancer cysts, he shows the hopelessness of the prognosis, if their character is not suspected by the surgeon at the operation, for the partial operation certainly disseminates the growth. The diagnosis is becoming more and more difficult because women present themselves more promptly for examination. Therefore, the surgeon sees smaller tumors which give none of the cardinal signs of cancer. In operating Dr. Halsted sacrifices a large amount of skin, covering the defect with a skin graft.

Drs. Robert B. Greenough, Channing C. Simmons and J. Dellinger Barney, writing on "End Results of 376 Primary Operations for Carcinoma of the Breast," report seventy-one successful cases three years after operation. They emphasize the importance of removing plenty of skin and using skin grafts. Of the ninety-eight cases of Dr. Albert J. Ochsner, which he could follow, fifty-two cases are free from recurrence. All of his cases in the last six years received *x*-ray treatment after the operation and the results thus obtained are encouraging. Dr. Nathan Jacobson reports 71 cases from which he has heard, and which were operated on more than three years ago; thirty-five patients are living. He uses the *x*-ray for three months after the operation. Dr. John C. Oliver shows that, from the history of thirty-five cases, twenty-one had known of tumor in the breast for a year or longer before operation, and his results do not show that the prognosis has much relation to the length of time which the patient has known of the presence of the tumor. The danger of self-inoculation of the wound with cancer cells liberated at the time of operation, and the ways of preventing this, is presented by Dr. Arthur T. Cabot in his paper on "Carcinoma of the Breast."

Dr. Lewis S. Pilcher does not consider the prognosis hopeless because of involvement above the clavicle. He advises in most cases the removal of the glands at the base of the neck.

Dr. Joseph Ransohoff gives some very interesting cases showing recurrence after many years.

Dr. Henry R. Wharton reports a number of cases of metastasis of bones. Operations afford little chance of relief.

The paper on "Thymus Gland Treatment of Cancer," by Dr. Frederick Gwyer shows some remarkable results by this method of treatment.

Other interesting articles in this number are "Peritoneal Tuberculosis" by Dr. Parker Syms, "Acute Diffuse Gonorrheal Peritonitis" by Dr. Charles Goodman, "Some Practical Deductions from Personal Experience in the Treatment of Appendicitis" by Dr. Lewis A. Stimson, and "Motor-boat Fractures" by Dr. Henry P. DeForest. E. R. P.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College. Assisted by H. R. M. Landis, M. D., Demonstrator of Clinical Medicine in the Jefferson Medical College. Per annum in four cloth-bound volumes, $9.00; in paper binding, $6.00, carriage paid to any address. Lea Brothers and Company, Publishers, Philadelphia.

Volume I., March, 1906, contains Surgery of the Head, Neck, and Thorax, by Charles H. Frazier, M. D.; Infectious Diseases, Including Acute Rheumatism, Croupous Pneumonia, and Influenza, by Robert B. Preble, M. D.; Diseases of Children, by Floyd M. Crandall, M. D.; Rhinology and Laryngology, by D. Braden Kyle, M. D.; Otology, by B. Alexander Randall, M. D. Dr. Frazier devotes considerable space to cerebellar tumors, giving interesting statistics from 116 cases. Injuries to the cranial nerves are also considerably reviewed. His most interesting subject is the thyroid gland. Dr. Preble handles, thoroughly, epidemic meningitis, scarlet fever, and influenza, giving the recent results as a basis for discussion.

Volume II., June, 1906, contains Hernia, by William B. Coley, M. D.; Surgery of the Abdomen Exclusive of Hernia, by Edward Milton Foote, M. D.; Gynecology, by John G. Clark, M. D; Diseases of the Blood, by Alfred Stengel, M. D.; Ophthalmology, by Edward Jackson, M. D. Dr. Stengel devotes considerable space to pernicious anemia. Hygienic measures are believed to give the best results. Gout, diabetes, hemophilia, Hodgkin's disease, and exophthalmic goiter are all considered in the light of recent laboratory and clinical studies.

Volume III., September, 1906, contains Diseases of the Thorax and Its Viscera, Including the Heart, Lungs, and Blood Vessels, by William Ewart, M. D., F.R.C.P.; Dermatology and Syphilis, by William S. Gottheil, M. D.; Obstetrics, by Richard C. Norris, M. D.; Diseases of the Nervous System, by William G. Spiller, M. D.

Obstetrics receives the most attention and is written in a thorough manner. Chemistry of toxemias in pregnancy and clinical manifestations of the toxemias of pregnancy are carefully considered. Dr. Norris reviews Edgar's reports of the results of a year's study of the subject. Eclampsia, in its latest aspects, with treatment, is also reviewed. The latter portion of the article is devoted to obstetrical surgery. Lateral subcutaneous symphyseotomy is also reviewed, with Aubert's conclusions added.

Volume IV., December, 1906, contains Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas, and Peritoneum, by J. Dutton Steele, M. D.; Genitourinary Diseases, by William T. Belfield, M. D.; Diseases of the Kidney, by John Rose Bradford, M. D.; Fractures, Dislocations, Amputations and Surgery of the Extremities, by Joseph C. Bloodgood, M. D.; Practical Therapeutic Referendum, by H. R. M. Landis, M. D.

One of the most interesting of the topics considered in Dr. Steele's article is gastric secretion, in which lowered gastric secretion and normal and abnormal acidity receive special attention. Gonorrhea, syphilis of the prostate, and surgical conditions of the urinary tract are considered under genitourinary diseases. L. F. P.

Societies.

AMERICAN PROCTOLOGIC SOCIETY.

The ninth annual meeting was held at Atlantic City, N. J., June 3 and 4, 1907, with the president, Dr. Samuel G. Gant, in the chair.

The following officers were elected: President, A. Bennett Cooke, M. D., Nashville, Tenn.; vice-president, Louis J. Krouse, M. D., Cincinnati, Ohio; secretary-treasurer, Lewis H. Adler, Jr., M. D., Philadelphia; and the executive council, J. Rawson Pennington, M. D., Chicago, Ill.; .chairman, Samuel G. Gant, M. D., New York City; A. Bennett Cooke, M. D., Nashville, Tenn.; Lewis H. Adler, Jr., M. D., Philadelphia.

The next meeting will be in Chicago, Ill., June, 1908.

The following are brief abstracts of a few of the papers read:—

President's Address. The president, Dr. Samuel G. Gant, New York, said that the annual meetings of the society were like a postgraduate school where advanced information in proctology could be obtained by the members. He considers it unwise to admit to membership in the society the general surgeon and young rectal specialists of less than five years' experience in this special work, because the membership would become too large and the papers contributed by them would not meet the requirements.

He maintained that the proctologist of the future, in order to be successful, must have a thorough literary and medical education, a hospital training and clinical facilities, and that he must be clever, industrious and persistent. He said it is the duty of the proctologist to demonstrate by his work and writing that most tubercular fistulas are curable and that the curing of ordinary fistulas does not tend to bring about lung or skin affections as was formerly believed; that fecal incontinence does not follow fistula operations when the muscle is cut at a right angle and the wound is properly dressed; that many rectal diseases, such as fissures, ulcers, small fistulas and some hemorrhoids, can be operated upon under local anesthesia; and that, in the majority of instances, constipation and chronic diarrhea are curable by local and surgical measures. He emphasized the fact that the etiology of many discomforts, nervous and reflex phenomena, usually attributed to the genital organs, is frequently to be found in some pathologic process located in the sigmoid, rectum or anus.

Occult Hemorrhoids from the Rectum. Dr. William M. Beach, Pittsburg, stated: (1) Occult blood in the stool indicates disease high up in the gastrointestinal tract. (2) Accompanied by certain rational symptoms as pain localized, the origin of occult blood can be noted. (3) The discovery of blood in the stool may enable us to predict hemorrhage or prevent disaster. (4) The most frequent sources of occult blood are, in the order named, stomach, duodenum and caput coli. (5) The aloin-turpentine test as practiced by Dr. J. Dutton Steele of Philadelphia is recommended. (6) Proctologists should make an examination for occult blood a routine practice in cases of anemia accompanied by diarrhea or constipation.

Etiology and Symptoms of Fissure. Dr. C. F. Martin of Philadelphia said that the fissure is usually situated posteriorly and directly over the "white line" of Hilton. Most fissures start as the result of the distention of the canal by hard feces and excessive straining at stool. Those situated anteriorly are often seen after confinement, due to the pressure of the fetal head upon the perineum.

The sentinal pile is noted in most cases if the fissure has been present for any length of time. It is a simple inflammatory hypertrophy. Hypertrophy of the anal papillæ does not appear to be an important factor in the causation of fissure. True hypertrophy of the sphincters is rarely seen but in its place we find an excessive irritability of the external sphincter.

The distinctive symptom of this disease is pain or sphincteralgia, preceded by a "pain interval" of from one minute to an hour, during which time the patient has comparative comfort. The pain is caused by spasm of the sphincter compressing the nerves in the ulcer. This contraction interferes with the perianal circulation and renders the inflamed nerves more sensitive. The "pain interval" is caused by a temporary improvement in the perianal circulation produced by the straining efforts at stool.

The constipation of fissure often precedes the formation of the ulcer, an irritable sphincter being the underlying factor in the production of this condition. After the formation of the ulcer the constipation increases, due to the patient's fear of the pain following stool.

The treatment consists in the divulsion of the sphincters and the usual stimulating after treatment. The sentinal pile should be removed at the time of divulsion. Division of the external sphincter is not advised, for frequently it does not unite and eventually atrophies. Fistulas, abscesses and fecal impaction are mentioned as frequent complications of fissure and call for appropriate treatment.

Local versus General Anesthesia in Rectal Surgery. Dr. G. B. Evans, Dayton, Ohio, said that the shock incident to the terror of pain is incomparable to that which is likely to follow an abbreviated use of a general anesthetic. Because an operation can be done painlessly, it does not follow that there will not be subsequent suffering and perhaps severe shock.

But in this nerve block period of Creile and Pennington, and the Gant period of dermal and subdermal distention, we are told there is scarcely any use any more for a general anesthetic. Do we not believe as proctologists that, in our operative field, sensibility is most difficult to abolish, and would it not naturally appear that more narcosis is necessary in this kind of surgical work and as a consequence more shock? Again, would it not be possible, by the combined use of general and local anesthesia, that less shock would ensue and more operations could be made with success. Dr. Evans believes that by using the local anesthetic preceding the general anesthesia we lessen the amount of the general anesthetic appreciably, diminish the dread and fear, and consequently diminish the shock and danger thereby. Therefore, the combined method of narcosis, less anesthetic, suspending shock incident to conscious dread, as well as anesthetic shock, renders more complete operative area, consequently more satisfactory work. It is simple to operate upon prolapsing piles, but not so simple to operate npon piles above the sphincters, yet demanding operative interference.

The injections of sterile solutions disturb the parts anatomically. The frequent punctures through the tissues invite infection, and infection invites trouble. The chief advantage is that occasionally we are able to do work in the office but even then unsatisfactorily. He said he failed to see the advantage of operation under local anesthesia in the office and follow the patient home and give hypodermic of morphin over the usual custom of operating at home in the first place.

An operation for hemorrhoids is a matter of some seriousness, often attended by some shock, often bloody, and the greatest caution should be observed that asepsis is obtained.

He thinks it is not best for our patients that general practitioners should be taught that aseptic precautions at the time of operation and rest at home for a few days, is unnecessary. Do we not magnify the applicability of local anesthesia, will not accidents occur, are we not sacrificing perfect scientific work, are we not belittling our chosen work, a class of operations that are important and not free from danger?

Fecal Impaction. Dr. Lewis H. Adler, Jr., Philadephia, called attention to the result of obstipation, or an attack of constipation causing an accumulation of feces in the cecum or in any part of the colon; but the term impaction usually should be employed when such an accumulation occurs in the pouch or ampulla of the rectum or in the sigmoid flexure.

Attention was called to the difference between an ordinary persistent constipation and an impaction as the latter may follow from a single attack of constipation whereas obstinate constipation may never, or only after a long period, cause impaction. The symptoms of the two conditions are also very different as an impaction is usually marked by a diarrhea whereas chronic constipation is associated with costiveness. The treatment was detailed as consisting, primarily in the removal of the mass and, secondarily, in the relief of the inflammation of the mucous membrane occasioned by the irritating presence of the fecal matter as well as the removal of all causes which contribute to the constipation habit.

The easiest manner of breaking up the fecal mass is to put the patient under an anesthetic and then forcibly to divnlse the sphincters, after which the mass may be disintegrated by means of the finger, a lithotomy scoop or an old fashioned iron spoon. In women considerable assistance may be rendered by passing a couple of fingers into the vagina and by this means steadying the mass so that it may be the more readily broken. In some instances the writer was able to break up an impaction without resorting to anesthesia, simply by using the finger and sometimes by the additional use of a bivalve speculum and a rectal scoop or spoon.

Previous to resorting to instrumental aid in the removal of the impaction, the fecal mass may be softened and its passage facilitated by the use of enemas; especially is this so in cases in which the sigmoid is the part affected. For the purpose of administering the injection, a douche bag holding several quarts is to be preferred. The injection substance should be composed of soap and a dessertspoonful of glycerin to a quart of water. When the impaction is in the sigmoid, the injection should be given through a Wales bougie, preferably the one modified by Dr. Dwight H. Murray of Syracuse, which is stiffer than the ordinary article sold. When this method is employed the patient should be placed in the knee-chest posture.

A word of caution shonld be given here as to the danger surrounding the unguarded use of drastic purgative drugs in cases of impaction. By their employment peristalsis is increased and the fecal mass softened, but the bowel, in its inflamed and distended condition, may be thereby the more easily ruptured, and, if, in addition, a stricture is present, the caliber of the gut may be entirely occluded by forcing into it the hard fecal mass with the attendant symptoms and consequences of total obstruction of the intestines. So much for the treatment of the actual impaction.

The Treatment of Ischiorectal and Pelvirectal Abscesses. Dr. T. Chittenden Hill, Boston, said that he employed general anesthesia produced with ethyl chlorid for the ischiorectal abscess and ether anesthesia for the pelvirectal abscess.

His experience with infiltration anesthesia has been unsatisfactory. He emphasized the importance of an early incision for perirectal abscesses, claiming that when acute symptoms have existed for a day or two, with pain and tenderness, even before there is much edema or discoloration of the skin, long before fluctuation can be detected, an incision may prevent abscess formation by allowing the escape of blood or serous exudate from the engorged blood vessels.

He advised a T-incision and breaking up the existing septa with the finger, after which the sphincters are divulsed. He believed squeezing, scraping or disinfecting an acute abscess to be a great mistake, as it only serves to destroy the new granulation tissue and to spread the infecting bacteria. For the deeper ischiorectal and in all pelvirectal abscesses he recommended rubber drainage tubes, discarding their use as quickly as possible in the after treatment.

He believed that the great majority of pelvirectal abscesses should be reached by perineal dissection.

Cryptitis. Dr. J. Coles Brick, Philadelphia, said that the anal valves and crypts, first pointed out by Morgagni, are found as vestigial remains of the junction of the rectal mucous membrane with the skin. They vary in number and size, but are absent in the anterior and posterior commissures. They have no known functions, but are the cause of obscure symptoms, when diseased, and from the fact that the valve or covering part of the crypt may conceal the diseased area, repeated examination will fail to show the lesion unless each crypt is probed, when tenderness or pain will be felt. A conical, fenestrated speculum is the best to use, and, when the diagnosis has been made, the valve should be removed and the crypt converted into a raw surface, so that healing will obliterate it.

LEHIGH VALLEY MEDICAL ASSOCIATION.

The twenty-seventh annual meeting of the Lehigh Valley Medical Association was held at Glen Summit Hotel, July 11, 1907. A part of the members arrived the night before and spent a pleasant evening and morning on the hotel veranda or in wandering around the delightful walks and drives. The report of the treasurer showed a balance of $350.00. Seven new members were elected.

The president's address, "The Goal of Yesterday Will be the Starting Point of To-morrow," was delivered by Dr. Charles McIntire of Easton. On motion a vote of thanks was tendered Dr. McIntire for his address, and he was requested to furnish a copy for publication in the Pennsylvania Medical Journal.

The annual address, "The Examination of the Sick Infant or Child," was delivered by Dr. James Herbert McKee of Philadelphia. He outlined a systematic examination and recommended a careful taking of the history and a thorough examination in each case however simple the case may appear at first sight.

The forty members present had a rich treat in listening to the addresses by Drs. McIntire and McKee, both of which showed much thought and careful preparation.

The following officers were elected: President, Dr. John T. Howell, Wilkes-Barre; vice-presidents, Drs. Adam L. Kotz, Easton; William P. Walker, South Bethlehem, and Mary A. Wenck, Sunbury; secretary, Dr. Clinton J. Kistler, Lehighton; assistant secretary, Dr. W. J. Obermeyer, Mauch Chunk, and treasurer, Dr. Albert A. Seem, Bangor.

NOT PARTICULAR.

"Doctor, how can I ever repay you for your kindness to me!"

"Doesn't matter, old man. Check, money order, or cash."

According to Sir Henry Thompson, thirty-four per cent. of men reaching sixty years of age have enlarged prostates, but less than half of these suffer from the disease.

Reports of County Societies

BERKS—June, July.

The regular meeting of the Berks County Medical Society was held June 11, with the following members present: Drs. Cleaver, Feick, Frankhauser, Gerhard, Hartman, Kauffman, Keiser, Longaker, Lytle, Overholser, Rentschler, Runyeon, Shearer, Shoemaker, Stump, Taylor, Weber, and Zeigler.

A paper entitled "Anatomy and Physiology of the Stomach" was read by Dr. R. K. Weber.

Dr. Gerhard read a paper on "Motor Insufficiency—Causes, Diagnosis and Treatment" which was discussed by Dr. Cleaver.

The regular meeting of the Berks County Medical Society was held July 9. The following members were present: Drs. W. P. Bertolet, Burkholder, Brunner, Cleaver, Feick, Fisher, Frankhauser, Hartman, Hunsberger, Keiser, Longaker, Lytle, Runyeon, Shaeffer, Shoemaker, Taylor, Wenrich, Wagner and Zeigler.

Dr. F. R. Brunner read a paper on "The Proper Care of Infants During the Summer Months."

A paper on "Summer Diarrhea of Children—Causes, Diagnosis and Treatment" was read by Dr. W. E. Hunsberger.

Both papers were discussed by Drs. Cleaver, Frankhauser, Lytle, Shaeffer, Feick, Keiser, Hartman and Shoemaker.

One proposition for membership was received.

S. Banks Taylor, Reporter.

CLINTON—July.

The regular meeting of the Clinton County Medical Society was held at North Bend, July 19. Drs. R. Armstrong, Ball, Corson, Fullmer, Gilmore, Green, Leah, Harvey, McGhee, Mervine, Painter, Watson and Wignall were present.

After an excellent trout dinner, the society was called to order by President McGhee.

Dr. F. P. Ball read a paper on "Some Bladder Troubles." He called attention to the necessity of strict asepsis in all these cases, then related a case of tuberculosis of the bladder that had improved under treatment. He gave a history of a case of rupture of the bladder which came under his care fifteen hours after the accident occurred. The patient had been drinking and fell upon a stump, striking himself above the pubes. He was taken with symptoms of collapse. A very small quantity of urine was obtained by catheter, and that bloody. The abdomen was opened and a long, ragged rent in the bladder walls was found and sutured. Drainage through the abdominal incision was maintained for three or four days, and a catheter retained in the bladder for eight or nine days. The patient recovered with no bad symptoms.

A general discussion on "Abdominal Tumors" was opened by Dr. Mervine.

Dr. Henry L. Wignall of North Bend and Dr. L. E. Leah of Renova were received as members of the society.

R. B. Watson, Reporter.

CUMBERLAND—July.

The regular quarterly meeting of the Cumberland County Medical Society was held at Mt. Holly, Tuesday, July 9, at 3 P. M. The following members were present: Drs. Allen, Bowman, Douglas, Daugherty, Grimmer, Hudson, Pilcher, Phillipy, Preston, Plank, Shoemaker, Shepler and Spangler.

The minutes of the last meeting were read and adopted. Dr. George Hemminger was elected an honorary member of the society.

On motion of Dr. Pilcher it was recommended that the delegates from the state society to the American Medical Association be instructed to advocate an appropriation from the American Medical Association to the N. S. Davis memorial fund.

Dr. Pilcher was nominated for district censor. Dr. Allen was elected member of the House of Delegates with Drs. Bowman and Shoemaker as alternates.

Dr. Russell of Mt. Holly was elected a member of the society.

On motion of Dr. Spangler the delegate to the state society was instructed to request the committee on public policy and legislation to introduce a bill in the state legislature making the physician's bill an open account and collectable after six years.

Dr. Kisner read a paper on "Results Following Neglect of Obstruction of the Nasal Passages." Adenoids and deflected septum often cause changes in the facial expression. Adenoids frequently cause deafness and infections of the middle ear. In injury to the nose, a careful examination should be made for any deflection of the septum.

Dr. Preston read a paper on "The Humorous in Medicine," showing by many happy allusions that there is a humorous as well as a serious phase to the profession of medicine.

The society adjourned to meet in Newville in October.

HILDEGARDE H. LANGSDORF, Reporter.

FRANKLIN—JULY.

The regular quarterly meeting of the medical society of Franklin County convened in the Wayne Building, Waynesboro, Tuesday, July 16, as guests of the Waynesboro Academy of Medicine, all of whom are members of the county society. Dr. J. W. Croft presided and the meeting opened at 2:30 P. M.

The following were present: Drs. Amberson, Bonbrake, Brosius, Coffman, Devilbiss, Fritz, Hartzell, Hoover, Kauffman, Kempter, McLaughlin, Miller, C. F. Palmer, Schultz, Seibert, W. F. Skinner, I. N. and Joseph L. Snively, Strickler, Sollenberger, Unger, and as guests, Drs. M. B. Hartzell, Philadelphia; V. M. Reichard, Fairplay, Md.; Victor D. Miller, Hagerstown, Md.; W. B. McLaughlin, State Line, Md.; and A. W. Thrush, Greenvillage; and Mr. C. T. Maclay, Chambersburg, a student of the medical department of the University of Pennsylvania.

Dr. J. J. Coffman, Scotland, was elected member of the House of Delegates, and Drs. J. W. Croft, Waynesboro, and Chas. M. McLaughlin, Greencastle, alternates. Dr. Joseph L. Snively was nominated for district censor.

Dr. A. W. Thrush, Greenvillage, was elected to membership in the society.

"As Seen and Heard at Atlantic City" was given in the form of short reports. Dr. Amberson, spoke of the work done at the meetings and of its value. He urged that more time should be given to the session, enabling the members to benefit by the work done in the sections.

Dr. Coffman spoke of the size of the convention. He urged all, especially the younger members, to attend all meetings that are held conveniently near, and, first of all, to be a member of the American Medical Association. The membership in the county society gives membership in the state society, and membership in the American Medical Association puts you in the complete organization. By attending the meetings, you learn to grasp the idea and manner of the working of the association: besides, you receive inspiration and interest in your profession. Dr. Unger spoke of some of his experiences and urged members to attend as frequently as possible.

Dr. V. M. Reichard, Fairplay, Md., read an interesting and practical paper on "Migraine." In every case there is something in the system which gives rise to the toxic explosion. Go to the root of the case and find out the cause. The liver and alimentary canal are usually involved in the attack. One very important matter to exact in the treatment of every case of migraine, is the entire and submissive coöperation of the patient. Unless this is fully secured you might better tactfully retire from the case. Dieting is a very important part of the treatment and especially must the frying pan be entirely discarded. Dr. Reichard advises acetanilid, guarded with camphor and caffein, to be used carefully by the patient at the first indication of the attack, which may thus be warded off.

Dr. M. B. Hartzell, Philadelphia, read a paper on "Some Practical Points in the Diagnosis and Treatment of Disease of the Skin. When iodid of potassium fails to give the effect, usually mercury gives the result. Under the head of drug eruption he said that iodid of potassium sometimes gives most unhappy effects. Acknowledgement of eruption self-produced is very difficult to obtain from the patient, nor will the parents usually admit the possibility. Scarlatiniform erythema, while in appearance similar to scarlet fever, lacks the prominent symptoms. There is an absence of throat complication and strawberry tongue. In using local applications in skin eruptions, always use mild ones: strong ones may produce additional dermatitis. Do not overdose scabies.

A vote of thanks was tendered Drs. Reichard and Hartzell. The society also tendered a vote of thanks to the Waynesboro Academy of Medicine for the entertainment during the afternoon.

After adjournment the Waynesboro Academy of Medicine served refreshments.

JOHN J. COFFMAN, Reporter.

HUNTINGDON—July.

The Huntingdon County Medical Society met in the Huntingdon Club rooms, Huntingdon, July 11, at 10:30 A. M., with President C. A. R. McClain in the chair. Present: Drs. Bush, C. and W. J. Campbell, Evans, Frontz, Johnston, D. P. Miller, Myers, and Stever.

Dr. C. B. Bush was elected member of the House of Delegates of the state society; Drs. W. J. Campbell and W. H. Sears, alternates. Dr. W. H. Sears was nominated for district censor.

Dr. C. B. Bush read a paper on "Acute Gastric Catarrh." He described the disease as an inflammation of the stomach of more or less intensity. The etiological factors are errors in diet, insufficient mastication of food, swallowing liquids too hot or too cold, abuse of alcoholic drinks, and at times microörganisms or their toxins. The chief symptoms are loss of appetite, heavily coated tongue, fetid breath, increased salivation, nausea, and vomiting, constipation or diarrhea, and the feces are of an offensive odor. Fever may be present in the severe form; general lassitude and headache, and herpes may appear on the lips. Usually there is gaseous distention of the abdomen and tenderness of the epigastrium. It is to be diagnosed from the incipient stage of typhoid fever or that of meningitis.

In treatment, bear in mind the removal of the exciting cause, the checking of the irritability of the stomach and the importance of giving the diseased organ complete rest. He advises evacuation of the stomach contents either by emetic or lavage. Then give a single dose of calomel of from two to five grains or in an exceptional case ten grains. Calomel has an influence little short of specific on the mucous membrane inflamed through dietetic errors or alcoholic excess. In six or eight hours give a saline laxative. For the gastric irritability, he advises rest in bed, the withdrawal of all food, the application of counter-irritation and give by the mouth one or a combination of the following: Bismuth, subnitrate, cerium oxalate, cocain, codein, carbolic acid, and the bromids. For pain, codein, cocain and dilute hydrocyanic acid in combination or morphin by the skin.

Diet: Milk diluted or peptonized. Nourishment should be of the lightest character. Prognosis is favorable unless complicated by some other disease.

Dr. Myers opened the discussion. He believes the disease is caused by bacteria. Dr. Johnston believes we have no specifics for this disease. Dr. Stever spoke of the prophylaxis of the disease. Dr. Miller said that those persons who are great bread eaters are more subject to the disease.

The society adjourned at 11:35 A. M.

H. C. Frontz, Reporter.

INDIANA—July.

The regular meeting of the Indiana County Medical Society was held at Saltsburg, July 9, with eighteen physicians in attendance. The meeting was called to order by the president, Dr. H. M. Wellman.

The censors reported favorably on the application for membership of Drs. Neal and Rinker and they were unanimously elected to membership. Four applications for membership were received and referred to the censors.

Dr. Elmer Onstott was elected delegate to the meeting of the state society and Drs. W. L. Shields and W. J. Pennock, alternates. Dr. Luther Clagett was nominated as district censor.

The following papers were presented:—

Typhoid Fever: Etiology, Dr. B. F. Coe; Pathology, Dr. W. L. Shields; Differential Diagnosis and Prognosis, Dr. Elmer Onstott. Treatment: Prophylactic and Dietetic, Dr. E. B. Earhart; Medicinal of Attack, Individual Symptoms and Complications, Dr. J. T. Cass; Management of Convalescence, Dr. M. A. Luther. The papers were carefully prepared, and while they all showed careful collateral reading, each writer tried to bring out the principal points which had come within the range of his own experience. All the members took part in the discussion and many valuable points were brought out.

The next meeting will be in the nature of an outing in the northern part of the county on a date to be set by the president.

W. J. Pennock, Reporter.

LANCASTER—July.

The regular monthly meeting of the Lancaster City and County Medical Society was held in Malta Temple, Lancaster, with Dr. C. P. Stahr in the chair. Present: Drs. Appel, Atlee, Barsumian, Berntheizel, Bowman, Bowers, Breneman, Brenholtz,

L. M. Bryson, Bolenius, S. T. Davis, Denlinger, Garretson, Gerhard, Gray, Harter, Heller, A. H. and C. E. Helm, G. B. and J. D. Hershey, Houston, Hurst, Jenkins, Kennedy, G. C. and J. W. Kinard, King, Kohler, Lehman, Leslie, McCaa, Markel, Miller, Mowery, Musser, Netcher, Newpher, Raub, Reeser, Roebuck, T. M. Rohrer, H. B. Roop, Schowalter, Stahr, Stewart, Sultzbach, Tinney, Trexler, A. V. and H. Walter, Weidler, Zeigler, and John H. Musser of Philadelphia.

The minutes of the preceding meeting were read and approved.

Drs. Frank G. Hartman and A. R. Craig were elected members of the House of Delegates, and Drs. M. W. Hurst, A. G. Bowman, L. K. Leslie, J. H. Musser, alternates.

Dr. John H. Musser of Philadelphia read an interesting paper on "Some Considerations of Gastric Ulcer." The paper was discussed by Drs. Appel, Berntheizel and Gerhard.

In reply to the discussion, Dr. Musser stated that the withdrawal of all food by the mouth and substituting rectal feeding is the ideal treatment at first, followed by Lengardt's method of judicious administration of white of egg and preparations of meat and, a little later, cereals, stale bread with a great deal of butter, oils, etc., rest and general methods to increase tone and nervous system, hot and cold douches, hydrotherapy, bismuth, opium, nitrate of silver, belladonna or atropin.

On motion the society adjourned.

PARK P. BRENEMAN, Reporter.

LEBANON—JULY.

The Lebanon County Medical Society met in the parlor of the Eagle Hotel, Lebanon, July 9, with the president, Dr. Guilford, in the chair. Members present were Drs. Guilford, Klein, Heilman, J. J. Light, and H. H. and W. R. Roedel.

In view of a letter from Dr. Breneman, secretary of the Lancaster County Medical Society, relative to arranging for the fourth annual meeting of the members of the fourth censorial district, consisting of Lancaster, Dauphin and Lebanon counties, of which meeting the Lancaster County Society is to be the host, Drs. Guilford and W. R. Roedel, a committee appointed last year to act for this society, were instructed to extend to that society the usual and proper coöperation.

Dr. Klein presented two cases for clinical exposition and discussion. The first, in a man aged fifty years who had been affected for ten years, diagnosed as a case of hypertrophic sclerosis of the liver, had for its predominant features enlarged veins in the external abdominal surface, occasional jaundice, at times ascites, dullness and pain over and in the right lobe of the liver, no malarial history and no abnormal urinary showings. Treatment: Phosphate and choleate of soda, strychnin, Jalap powder, sometimes calomel, digitalis somewhat constantly. Present condition of the patient improved and prognosis is hopeful.

The second case, a female aged eighteen, well nourished and with a negative history, diagnosed as a case of "spontaneous gangrene," had these clinical features: A surface two inches in diameter on the outer side of the left arm, just below the shoulder, on which there is a more or less constant recurrence of sores about the size of a dime, breaking down to a true gangrene, affecting the skin tissue only, then under treatment followed by a sloughing out of the tissue involved and a return to normal conditions, the process requiring from two to three weeks. The seat of this recurring process is that of a vaccination done eight years ago, although the latter was a normal one in every respect. All local and constitutional treatment by Dr. Klein has failed to prevent recurrence, nor do medical writers record successful treatment.

In view of the circumscribed area of tissue involved, Dr. Klein proposes to thoroughly dissect the affected part, together with a part of the subcutaneous tissue and then bring the outlying sound tissue together and over the seat of the removed part or diseased tissue and effect a union and covering by primary adhesion, as the only procedure promising permanent relief. The Doctor gave some bibliography as to these cases, which showed them to be rare and intractable. On July 16 Dr. Klein advised the writer that since the meeting he had removed the elliptical portion of skin involved and subcutaneous tissue about three by one and a quarter inches in area, with every indication of union by first intention. The case, if cured by surgical procedure, will be unique.

C. M. STRICKLER, Secretary.

LEHIGH—July.

A regular meeting of the Lehigh County Medical Society was held in the Administration Building, Allentown, July 9, with a large number of members present.

After routine business, Dr. W. B. Erdman of Macungie, was nominated for district censor. Dr. W. H. Hartzell was elected member of the House of Delegates, and Dr. F. A. Fetherolf, alternate.

Dr. S. C. B. Fogel read a paper on "Is Crime a Disease?" After defining crime as an act committed or omitted in violation of the public law either forbidding or commanding it, he gave the different synonyms for crime, also describing them. He commented on the opinions of different writers as to the possibility or impossibility of distinguishing a criminal from a normal man by the shape of his skull, or by measuring the human responsibility in accordance with different craniological types. He showed that it had been learned from craniology, that, in the two distinct and characteristic types of criminals, viz, murderers and thieves, by comparison with normal men, an indisputable inferiority has been noted in the shape of the head, together with the frequency of hereditary and pathological departure from the normal type. He referred to criminal psychology, grouping it and defining it. Then he took up crime as a result of disease, citing cases where criminal tendencies were inherited, and where there was predisposition to do wrong, also, sometimes, being the result of some physical causes or defect which an operation will cure, mentioning a case where there seemed to be an irresistible tendency for wrong doing, which ceased after circumcision. He also said that in the young, where there are enlarged tonsils, weak eyes and adenoid growths, there seems to be more intimate association with criminal intent. When these are cured, there seems to be a marked improvement in their behavior.

In the question of truancy, he quoted Superintendent Maxwell of New York. He said this question should best be solved by medical or surgical treatment, that the truant tendency is not crime, but disease. From the criminal offenses that are adjudicated in the courts, observations seem to show that very often crime is a result of disease, but it does not justify, by any means, that crime is always a result of disease.

In conclusion, we may say, that while crime is not a disease, in many cases the disposition to commit crime is due to physical causes, and it is necessary for us to make careful inquiry in all cases where there is the least suspicion of physical or mental weakness, in order that proper remedies may be employed.

H. H. Herbst, Reporter.

MIFFLIN—July.

The Mifflin County Medical Society held an enjoyable meeting at Milroy, July 11, on which occasion the sixteen members present were the recipients of the bountiful hospitality of Dr. and Mrs. William H. Kohler.

A donation of five dollars was unanimously voted to the Dr. N. S. Davis Memorial Fund.

Dr. B. R. Kohler was elected a member of the House of Delegates, and Drs. Barnett and Harshberger, first and second alternates, respectively.

All present were requested to use their influence in assisting to organize a medical society in the adjoining county of Juniata.

Action was taken to procure the names, addresses and prices of nurses in the locality for a nurses' directory, so that nurses may be secured promptly in cases of emergency.

Dr. Rupp read a paper on "The Diagnosis and Treatment of True Pneumonia." After detailing the usual symptoms of the disease, the question of general treatment was taken up. The use of poultices was condemned by most, but not all. Dr. Harshberger was particularly severe on the laity who want the doctor to use something that would "stink," onions, or even sometimes fresh cow excrement. He and Dr. Getter were insistent that the patient should have plenty of fresh air, Dr. Getter claiming that, in his recent attack, it helped him to endure the suffering. He would have been glad if his attending physicians would have allowed him to keep his head out of the window. A bandage around the chest, the same as we would bandage and keep quiet a broken bone, was advocated by some. Dr. Clarkson and a few others advocated thorough and immediate fly-blistering, with a view of aborting the disease at first and hastening resolution later on.

Nearly all favor full doses of veratrum viride (Norwood's tincture) or digitalis to bring down the heart's action at first; and, of course, strychnin, etc., at any time that a cardiac stimulant should be indicated. Dr. Parcels told the story of the man who made two cat holes, a big one and a little one, in his barn door, saying, "I don't believe in putting all the cats through the same hole." Several agreed with him that each case of pneumonia should be treated according to its own actual needs; that one might need sedative and another stimulating treatment; or, in other words, the expectant plan should be followed, trying to combat each adverse symptom as it occurs. Dr. B. R. Kohler and others spoke of the good results often achieved by giving full doses of muriate and carbonate of ammonia to aid resolution.

Dr. McKim said, "Let the doctor, when the patient is *in extremis*, stay right with him and meet every bad symptom the moment it appears. I think I have saved several lives in this way."

Some favored giving an opiate when needed to lessen the pain. Dr. Rupp and some others thought a high temperature did no great harm and might even be beneficial in destroying the pneumococci.

Walter H. Parcels, Reporter.

SCHUYLKILL—July.

The Schuylkill County Medical Society met in Pottsville, July 9, with Dr. G. H. Moore presiding. The minutes of the previous two meetings were read and approved.

A communication from Dr. J. M. Anders of Philadelphia in reference to a donation for the N. S. Davis memorial fund was read and a motion by Drs. Lenker and Miller, appropriating ten dollars to the fund, was carried.

The committee to inquire into the standing of a certain physician reported that he had been practicing in the county without being registered and had no state license, but that he had taken the recent examination for licensure, the results of which are now pending. Upon motion the committee was continued and requested to report further at the next meeting.

Dr. C. Lenker was elected a member of the House of Delegates at the meeting of the state society to be held at Reading in September, with Drs. Corson and Birch as alternates. Dr. A. F. Bronson was chosen as nominee for district censor.

Dr. W. E. Robertson of Philadelphia spoke on "Diseases of the Heart." After reviewing the more recent investigations concerning the physiology of the heart, he took up the pathology of the commoner valvular affections which he illustrated by aid of lantern slides.

Upon motion the society voted to adjourn with instructions to the secretary that he designate and arrange for a place of meeting in August.

The physicians present were Drs. Birch, Bronson, Callen, Corson, Fleming, Holland, Heebner, Kramer, Langton, Lessig, Little, Miller, Moore, Ressler, Santee and Williams.

G. O. O. Santee, Reporter.

WASHINGTON—July.

The regular bimonthly meeting of the society was held in our room in the Court House, with thirty-seven members present. It was the midsummer meeting, and as it was given over almost completely to the eye, ear, nose and throat specialists in the program of postgraduate work, it was feared that there would be a light turn out, but the contrary was the result. The papers were all good and our specialists along these lines made friends by their thorough work.

Dr. Loyal G. Lutz of Roscoe was elected a member. Three suspensions were reported by the secretary for nonpayment of dues.

After the election of the two members of the House of Delegates and their alternates, and the nomination of a censor for the district, the scientific program was taken up.

Dr. J. F. Donehoo presented a case of fracture of the pelvis that was of much interest. "The Anatomy of the Eye" was given by Dr. C. B. Throckmorton. "Practical Ophthalmology" was the subject of a most instructive talk by Dr. F. C. Stahlman. "Iritis" was the subject assigned, and ably handled by Dr. J. B. McMurray. These papers were followed by discussion. The "Anatomy of the Ear, Nose and Throat" was given by Dr. W. E. Griffith. "Otitis Media and its Complications" was Dr. Dunkle's subject. Dr. James W. McKennan gave a short paper on "Acute and Chronic Rhinitis."

These papers all gave evidence of careful work and were appreciated by the members, as all were given in such a manner as would give the general practitioner the most benefit.

JOHN B. DONALDSON, Reporter.

WAYNE—JULY.

The regular meeting of the Wayne County Medical Society was held at the Allen House, Honesdale, July 18, with the following physicians present: Drs. C. G. and F. W. Corson, Ely, G. W. Guthrie, McConvill, Nielsen, Noble, Peterson, D. Reed, B. Schermerhorn, Searles, and A. B. and W. A. Stevens.

After enjoying dinner, the business meeting was called to order at 2:30 by President Brady. The usual routine business was transacted. Dr. Charles G. Corson of Rileysville was proposed for membership. Dr. A. B. Stevens was elected member of the House of Delegates of the state society, Dr. F. W. Corson being named as alternate. Dr. E. W. Burns was nominated for district censor.

Dr. George W. Guthrie of Wilkes-Barre, councilor for the third district, addressed the society, his subject being "The Doctor's Duty to Himself," an abstract of which follows:—

Ethics is the science of duty. Our duty to others, our fellow practitioners and our patients is defined in "The Principles of Medical Ethics" adopted by the A. M. A., and, briefly stated, it is "Do unto others as you would be done by" and "Be a gentleman." But there is another phase of duty,—duty to ourselves and so indirectly to our families and friends. That we should be pure, cleanly and temperate is a duty common to all men. But as physicians, it is our duty to appreciate better, and to magnify more, our calling, a profession the object of fun and pun by Moliere and Shakespeare, but presented in its true light by Ian Maclaren in his character of Dr. William Maclure. The high calling of the medical profession has been conspicuously shown in the camp and on the battle field. It is because of the doctor that work on the Panama Canal is possible, and it is because of preventive medicine that the country is no longer ravished by cholera, smallpox, yellow fever and like diseases.

The medical profession should be organized. To the local society should be admitted every educated, intelligent, reputable, legally qualified physician not a sectarian. Membership in the county society carries with it membership in the state society but every doctor should also join the American Medical Association and be a reader of its weekly journal. He gains a consciousness of the power of association from his membership, and if he feels it his duty to attend the various meetings he so gains a helpful vacation. The more perfect the organization, the better the fees, for physicians, of all men, fail to recognize the value of their own services. The contract system with fraternal organizations is to be condemned. Cut throat, starvation rates show that physicians do not appreciate financially their services. Attendance at meetings brings about a better feeling among physicians, and organization enables them to make and maintain just fees. The oftener a society meets, the greater will be the interest.

Then the physician also owes it to himself to preserve his energy and keep his faculties,—to live as long as other men. He should take frequent vacations, for by working fifty-two Sundays as well as holidays he lengthens his year to fourteen months, and his working day is rarely less than sixteen hours, twice that demanded by organized labor. With the better feeling induced by membership in his medical society, he can work together with his neighboring practitioner and the one will care for the other's practice while he seeks "re-creation" in fishing, hunting or traveling. The doctor should read good novels in order to gain rest. In all things, as well as in work, he should avoid excess, for excess makes hard arteries.

Furthermore, the doctor should not neglect his religious life. He need not subscribe to any denominational creed, but believe in some great creative power, a designing, intelligent force influenced by love of his creatures, and he must also realize that no matter how well he lives, he still falls short of what he should be; he must have a consciousness of his imperfections so that with his song of thanksgiving there will be a prayer for forgiveness.

So, to summarize, a doctor's duty to himself is: (1) To properly appreciate the dignity and value of his calling. (2) To properly appreciate the value of his services. (3) To care for himself physically. (4) To nourish his spiritual consciousness.

After his address, Dr. Guthrie was given a vote of thanks and elected an honorary member of the society.

The next meeting of the society will be held at Waymart, October 17.

Louis B. Nielsen, Reporter.

YORK—July, August.

The York County Medical Society met at York, July 11, at 1 P. M., with President Betz in the chair.

Dr. J. H. Comroe gave an address on the "Differential Diagnosis of Joint Swellings." He emphasized the importance of clearly understanding the anatomy of the joint or joints involved, and the ages of epiphyseal maturity of associated bony structures. Make comparison with fellow joint at all times; note the symptoms and signs, mode of onset, and advance of disease; keep a chart of temperature and pulse which may be suggestive, and give due consideration to the predilection for certain joints and the number involved, together with the anatomic characteristics of the local lesions, the lesions in other organs and tissues, and tendency to relapse.

Under the head of special modes of diagnosis, he referred to the influence to therapy and to antitoxins, bacteriological examination, transillumination, and *x*-ray.

The infectious joint swellings may be due to the typhoid bacillus, streptococcus (scarlatina), Pfeiffer's bacillus (influenza), gonococcus, pneumococcus, staphylococcus (tonsillitis, furunculosis, etc.), spirocheta pallida (lues), tubercle bacillus.

Practically all joint swellings are due to one of the above causes except those due to trauma and the so-called arthropathies, viz, (1) Intermittent joint effusions, (2) arthropathies of tabes and paralytic dementia, (3) syringomyelic arthropathies, (4) painful joints of psychoneurotics, (5) atrophic joints of cerebral and spinal palsies of children, (6) joint changes in acromegaly.

Dr. A. A. Long gave an address on the "Treatment of Joint Swellings." The chief treatment of most cases during the acute stage of an inflammation is either complete rest in bed or rest of the parts, secured by braces, casts, or bandaging, either with rubber or flannel. In swollen joints arising from contusions, the above rest treatment with cold by the use of the ice bag or by irrigation is indicated, though some cases do better by using hot applications. Swollen joints due to strains should be treated by perfect rest, cold, anodyne applications and replacement of any displaced tendons. Swollen joints due to wounds should be freely irrigated with sterile water or bichlorid solution, the wounds covered with sterile gauze, held in place with collodion and afterward immobilized. Infected joints may require irrigation and drainage. Swollen joints from synovitis should be placed at rest in a semiflexed position, lead water and opium applied locally, and possibly in some rare instances aspiration under antiseptic precautions.

In acute arthritis, rest, inunctions of an ointment of mercury, iodin and belladonna are useful. In gonorrheal arthritis, always treat the remaining urethritis and locally apply ichthyol to the joint, and, after all acute symptoms have subsided, give massage and passive motion carefully. When there is very marked effusion it may be well to aspirate and irrigate, and give internally iodid of mercury. In the swelling of joints due to syphilis, whether acquired or inherited, use iodids in appropriate doses, also some form of mercury, preferably the protoiodid. Sometimes much benefit is derived from cod-liver oil and iodid of iron. Locally an ointment of mercury and belladonna is beneficial.

In tubercular arthritis, he would recommend immobilization, extension, aspiration, injection of a suitable agent, excision, amputation, depending upon the condition of the patient, together with suitable constitutional treatment and open-air life.

The subject was generally discussed, and interesting cases were reported by the above mentioned speakers and Drs. Meisenhelder, Jr., Murphy and Holtzapple.

Dr. A. A. Long, president of the meeting of the physicians of the fifth censorial district, announced that the next meeting would be held August 15, at Mt. Holly Springs.

The York County Medical Society met in regular session in the parlors of the Colonial Hotel, York, August 1, at 1 P. M.

Dr. I. H. Betz, presided, and the following members were in attendance: Drs. Bacon, Betz, Bishop, Brodbeck, Dice, Everitt, Gable, Grove, Hartman, Hildebrand, Holtzapple, Jessop, Long, May, E. W. Meisenhelder, Jr., Pfaltzgraff, Rea, Rouse, Shatto, Shearer, Stick, Strack, Venus, Weil, and visitor, H. Elmer Trostle, D. D. S.

Dr. L. M. Hartman, who has just completed a fifteen months' postgraduate course at the University of Vienna, gave a brief report of the advantages there, emphasizing the large amount of clinical material and the attention given, especially to diagnosis and pathology, and the benefit of an organization among the English speaking students, known as the American Medical Association.

Dr. H. Elmer Trostle read a paper entitled "The Relation of the Oral Cavity to the General Health." The following is a brief abstract:—

A normal oral cavity is necessary to enjoy good health. Well formed jaws, good strong teeth, closing properly, are prerequisites to continued good health and the beauty of an individual.

In order to avoid the deformities of the jaws that are so often seen, the deciduous teeth should receive unremitting care, to the end that decay be not allowed to progress in such a manner that their pulps shall become exposed or lost before the physiological time for the teeth to be "shed." The premature loss of but one deciduous tooth may cause the disarrangement of all the permanent teeth, and modify the internal anatomy of the face. Inflammatory conditions of the deciduous teeth may prevent a normal development of the alveolar process and of the jaw proper.

The oral cavity is an important factor in the development of speech.

Malocclusion of the teeth has become so common that it is now almost the rule, rather than the exception. In proportion as malocclusion exists, so are the functions of the teeth and speech impaired, and the facial lines marred. Many diseased conditions can be traced to the condition of the oral cavity. In some individuals the crowns of the teeth are so well formed and arranged and knuckled together so perfectly that as long as the interdental papillæ are in a healthy condition there is little possibility for food to lodge. In others we find the food sticking between the teeth everywhere. This circumstance is of very considerable consequence in regard to the origin and progress of caries. When the gums recede in old age and the spaces between the teeth easily become packed with food, we find extensive caries occurring in dentures which for fifty or sixty years may have been practically immune.

Almost all kinds of bacteria are found in the mouth of the healthy individual, and, at times, these bacteria directly or indirectly produce local disease of teeth, gums, tonsils, etc., and by absorption may be carried to distant parts and produce local disease elsewhere or a condition of toxemia.

A great primal cause of anemia in children is dental decay, and with it may be local pus formation and general septic involvement of the whole alimentary canal, and, as a further consequence, indigestion and an irritable disposition. Indeed, oral sepsis may be a factor in the death of many a young child.

The cause of dental caries during pregnancy is identical with that of dental caries in general, and its frequency during that condition is due to a diathetic state which is responsible for the production of a salivary fluid, having a chemical composition, suitable to the development of the bacteria of dental caries.

Cavities of teeth, especially if small, and abraded surfaces are frequently the cause of neuralgia and reflex pain. It seems characteristic of all pulp diseases for the pain to be referred to a different spot or area than its origin.

All abnormal conditions of the mouth will cause malnutrition, hence the importance of timely prophylactic measures. The secretions of the mouth should be carefully studied. The tincture of the chlorid of iron and other astringent compounds should not be prescribed when it is possible to build up the tissues by using the bland and less injurious compounds. As a protection to the teeth, medicines that have an acid reaction should be taken through a tube or a straw and followed immediately by an antacid mouth wash, such as milk of magnesia. Water should not be used after taking an acid as it simply increases the activity of the acid on the carbonate of lime. This destructive energy of free acid may also be lessened by alcohol or Vichy.

The paper was discussed by Drs. E. W. Meisenhelder, Jr., Holtzapple, Jessop, Long and Trostle.

Dr. I. C. Gable reported a case of tuberculous meningitis, patient two years old, and the father of the child was operated on for tuberculous peritonitis about seven years ago; father is in good health at present. G. E. HOLTZAPPLE, Reporter.

Necrology.

In Memoriam—James H. Delany, M. D.

(The following resolutions were unanimously adopted at the regular meeting of the Erie County Medical Society, held April 2, 1907.)

Whereas, This society has learned with deep regret of the death of our esteemed and valued member, Dr. James H. Delany, who died on February 12, 1907, therefore, be it

Resolved, That this society mourns with, and extends its sympathy and condolence to, the bereaved family and friends; be it further

Resolved, That these resolutions be placed on the minutes of the society and a copy sent to the family.

F. A. WALSH.
G. A. REED.
GUY C. BOUGHTON.

In Memoriam—C. A. Dusinberre, M. D.

(The following resolutions were adopted at the meeting of the Wayne County Medical Society, May 16, 1907.)

Whereas, The Wayne County Medical Society has suffered a serious loss in the death of its honorary member, Dr. C. A. Dusinberre, who departed from among us May 12, 1907.

Whereas, Throughout his long professional life in Honesdale, his honesty, his courage in the face of adversity, his enthusiasm in his life work, and the possession of those qualities which make for manliness, leave us an example which we may well attempt to follow. Therefore, be it

Resolved, That, in the death of our honorary member, there has been one taken from our society whose memory we will ever honor and cherish with affection.

Resolved, That our society hereby expresses its appreciation of his professional attainments, and laments his departure from among us.

Resolved, That, to the members of his family, we extend the sympathy borne of genial regard; and that his career is crowned with the love and respect of the community in which he lived.

P. B. PETERSON.
H. B. ELY.
E. W. BURNS.

In Memoriam—Volney Homet, M. D.

(The following resolutions were presented and approved at the regular April meeting of the Bradford County Medical Society.)

Resolved, That in the death of Dr. Volney Homet of Wyalusing we have lost one of our best friends and a valuable associate, and the society one of its oldest and most conscientious members.

Resolved, That we extend to his family our heartfelt sympathy in this their time of sorrow, and to the community where he was a valued friend and adviser.

Resolved, That a copy of these resolutions be presented to the family of our departed friend and associate, and be published in the PENNSYLVANIA MEDICAL JOURNAL.

Dr. Homet died December 26, 1906, at his home in Wyalusing, of heart disease of which he had been a sufferer for several years. He was born at Homets Ferry, March 20, 1833, and was of French extraction, his grandfather being among the French refugees who came to this country during the French Revolution of 1793.

Dr. Homet attended the common schools, and later studied medicine at Jefferson Medical College, from which institution he was graduated in 1856. After graduation he came to Wyalusing, where he practiced until the breaking out of the Civil War, when he enlisted in the Seventh Regiment, Pennsylvania Reserves, and served as surgeon until the close of the war. He then practiced at Camptown until 1883, when he removed to Wyalusing where he has since resided.

Dr. Homet was married April 30, 1861, to Miss Emma Ingham, Sugar Run, whose death preceded his by several years. He is survived by one daughter, Miss Jessie Homet.

His extensive library of medical books,

at his request, was given to the Wyalusing Public Library for the use of physicians and medical students of Wyalusing and vicinity.

Dr. Homet was a member of the Bradford County Medical Society, the Medical Society of the State of Pennsylvania and the American Medical Association.

Francis Chaffee.
T. Ben Johnson, Jr.
C. M. Woodburn.

In Memoriam—Jacob F. Raub, M. D.

(The following memorial note was adopted by the Northampton County Medical Society, at the meeting held May 17, 1907.)

Dr. Jacob F. Raub was born in Williams Township, Northampton County, May 13, 1840. He received his early education in the public schools and Philips Academy at Easton, and later attended Jefferson Medical College and Long Island College Hospital, from which institutions he was graduated. While still a young man and before graduating in medicine, he began teaching school. After graduating from college, he practiced medicine in Mt. Bethel Township until the war broke out between the states when he enlisted in the army. His army record was very good and he received a medal of honor for bravery on the battle field. At the end of the war he was honorably mustered out of service.

He was appointed pension examining surgeon at Easton, with Drs. Cavenaugh and Stout, by President Cleveland, there being no pension examining board at Easton at the time, the old board having been removed by President Arthur some time before Cleveland's administration. Dr. Raub was also on the board under President Cleveland's second term. Upon relinquishing his duties on the pension examining board he took up his residence in Bethlehem, where he continued the practice of medicine until his appointment in the United States Pension Office at Washington, D. C., where he served with distinction until the date of his death on May 21, 1906. He was buried at Arlington Heights with military honor.

Dr. Raub was a congenial companion and a fine and honorable physician, and did not die on the battle field but in the line of his duty in the United States Pension Department.

A. Stout.
David Engleman.

In Memoriam—J. P. Sheibley, M. D.

(The following resolutions were adopted at the May meeting of the Perry County Medical Society.)

Whereas, It has pleased an All-wise Providence to remove from life our former fellow physician, Dr. J. P. Sheibley, a member of the Perry County Medical Society; therefore, be it

Resolved, That in his death the society has sustained a distinct loss and the profession at large a conscientious practitioner.

Resolved, That we hereby express our high appreciation of the services he rendered the society in the various offices he from time to time so capably filled.

Resolved, That, as we recognize in him one imbued with the highest spirit of professional etiquette and courtesy, we emulate his example.

Resolved, That these resolutions be entered upon the minutes of the society and a copy sent to his bereaved sisters at Landisburg.

In Memoriam—Frank Swartzlander, M. D.

(The following resolutions and memorial note were adopted by the Bucks County Medical Society at its meeting held May, 1907.)

Whereas, The members of this society were grieved to learn of the sudden death of their friend and fellow member, Frank Swartzlander, M. D., on March 31, 1907, therefore, be it

Resolved, That we appreciated Dr. Swartzlander as a genial and noble-hearted gentleman; as an able and accomplished gentleman, as was fully proven in hospital, on the battle field, and in his private practice. He was a kind and appreciative husband and father, a generous friend, a valuable citizen, and by his death this society, the profession and the community has lost one of its best loved and ablest members.

Resolved, That we tender to his broken family our heartfelt sympathy in this, their hour of sorrow and loss; that we enter this record on the minutes of this society and send for publication a copy to the Pennsylvania Medical Journal.

Joseph B. Walter.
Howard Pursell.
James N. Richards.

Dr. Swartzlander died at home on Sunday morning, March 31, of acute nephritis. He was born in Bucks County, February 9, 1842. Graduating from the University of Pennsylvania in 1863 he immediately entered the army as assistant surgeon of the 74th Pennsylvania Volunteers and participated in the battles of Chancellorsville, Gettysburg and John's Island. He was one of the surgeons on duty in the famous school house hospital at Gettysburg. Later he accepted a commission as surgeon of volunteers and was sent to join Sherman's army at Savannah. Here he remained until the close of the war, serving as surgeon of the military hospitals. He located in Doylestown in 1866, and was engaged in the active practice of his profession until within twelve hours of his death. After locating here he did much work throughout the county for his neighboring practitioners, as consultant in his special line. He also became noted as a general consultant and, by virtue of his eminent qualifications, he was accorded the honor as dean of the profession within the county.

Dr. Swartzlander was a gentleman in the fullest sense of the word, always courteous in manner. He was generous and kind to the unfortunate and never turned a deaf ear to the afflicted. His munificence will long be remembered by a large clientele. A few years before his death he presented to his home town and county a lofty and beautiful flag staff, the largest and most perfect wooden spar in America, which remains a fitting monument to his civic virtue and patriotism. Dr. Swartzlander belonged to the Grand Army, the Military Order of Loyal Legion and the Masonic Fraternity. He joined the Bucks County Medical Society in 1866, holding the record of longest continued membership in the society, having been a member forty-one years. He was also a member of the state and national medical societies. He is survived by two sons, both practicing physicians in Doylestown, and a daughter.

In Memoriam—Cornelius E. VanHorne, M. D.

(Resolutions adopted by the staff of the Passavant Hospital on the death of Dr. C. E. Van Horne of Pittsburg.)

Whereas, In the death of Dr. Cornelius E. Van Horne the staff of the Passavant Hospital has lost a faithful member.

Resolved, That the staff of the Passavant Hospital testifies its deep regret at the sudden demise of Dr. Van Horne which occurred on the second instant and that the staff sends its most sincere sympathy to his friends in their bereavement.

THE CITY OF READING.

Reading, the capital of Berks County, with 100,000 inhabitants, is situated on the north bank of the Schuylkill River, 58 miles from Philadelphia, 54 from Harrisburg, 36 from Allentown, and 35 from Pottsville. There are six lines of steam railroads entering the city, and five electric lines connecting with surrounding towns.

The Philadelphia and Reading road has large machine, locomotive and car shops, employing three thousand men. The Reading Iron Company has large blast furnaces, and rolling, pipe, and sheet mills. The Scott Foundry turns out some of the largest castings in the country. The Carpenter Steel Company supplied the shells used by Dewey at Manila, and by Schley and Sampson at Santiago. The Reading Stove Works, the Consolidated Hardware Works and numerous foundries and shops help in making Reading a famous center of iron manufacturies.

Reading has also large cigar factories, where millions of cigars are made annually, and hosiery, underwear, silk, woolen and cotton mills, the products of which are sent all over the world.

There is not a city of its size in the United States where the laboring class own as many homes as in Reading. They are all of brick and well built. The following churches are represented: African M. E., Baptist, Catholic, Episcopal, Evangelical, German Reformed, Lutheran, Methodist Episcopal, Presbyterian, Reformed, Reformed Lutheran, United Brethren, and United Evangelical.

The girls' high school is of granite and cost $230,000. The boys' high school, just completed, cost $350,000. This and all the other school buildings are of brick.

Reading has three hospitals, the Reading, the Homeopathic, and St. Joseph's. There is also the Home for Friendless Children, an Orphans' Home and a House of the Good Shepherd.

The streets running east and west are named. Penn Street is the principal street running east and west. The streets running north and south are named by number. North of Penn Street they are called North Front, North Second, North Third, etc.; south of Penn Street they are called South Front, South Second, South Third, etc. The streets north of Penn are Court, Washington, Walnut, Elm, Buttonwood, Green, Greenwich, Oley, Douglass, Windsor, Spring and Robin-

NEVERSINK MT. ELECTRIC RAILWAY

SCENE ON NEVERSINK MT.

son; south of Penn they are Cherry, Franklin, Chestnut, Spruce, Bingaman, Pine, Laurel, Willow, and South.

Penn's Commons is a park of seventy-five acres situated at the head of Penn Street. In it are found a monument to the First Defenders, another for the Firemen and one to President McKinley, and numerous elaborate fountains. Reading has four theaters, the Academy of Music, Orpheum, Grand Opera House and the Auditorium.

The Mount Penn Gravity Railway starts from 19th St. and Perkeomen Ave. and runs to the top of Mt. Penn, where the city of Reading lies, as it were, at your feet, opening like a panorama as you round the curve. From the top the cars run by gravity through beautiful mountain scenery to the point from which one started an hour before.

The cars of the Neversink Mountain Railway start from Ninth and Penn Sts. every half hour. The road is nine miles long, passing through a mountainous country to Point Lookout where a fine view of the Schuylkill south of Reading can be had, the river forming some majestic curves. This view of the city is entirely different from that seen from Mt. Penn.

The committee on arrangements for the fifty-seventh annual session of the Medical Society of the State of Pennsylvania are planning to utilize in full all the time available for the entertainment of the members and the visiting ladies.

Physicians attending the Reading Session are assured a delightful time.

ANNUAL ANNOUNCEMENTS AND PRELIMINARY PROGRAM OF THE FIFTY-SEVENTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA TO BE HELD IN READING, SEPEMBER 23-26, 1907.

Athens, Pa., July 23, 1907.

The Fifty-Seventh Annual Session of the Medical Society of the State of Pennsylvania is hereby called to meet in Rajah Temple, Franklin and Pearl Streets, Reading, Pa., on Monday, Tuesday, Wednesday and Thursday, September 23, 24, 25 and 26, 1907, and a preliminary program, subject to change, will be found below.

I. C. Gable, President.
C. L. Stevens, Secretary.

RAILROAD RATES.

The Trunk Line Association has furnished card orders for use of members and friends who wish to attend the Reading Session. The cards read: "Ticket agents of lines in Pennsylvania will sell to bearer one excursion ticket to Reading and return at the reduced fare authorized for the above meeting. Tickets to be sold September 21 to 26, good to return leaving Reading to September 28, 1907, inclusive. No excursion ticket to be sold for less than 25 cents."

The following roads will accept and honor the Trunk Line card orders: Cumberland Valley, Susquehanna and New York, Western Maryland, and the Williamsport and North Branch.

The rate authorized will in some cases be more than two cents a mile. In Philadelphia and possibly other points the same rate can be secured for a six-day excursion ticket without any card order. Members will do well to consult their local ticket agents early and then use a mileage book, a local excursion ticket or send to the secretary of the state society for a card order as will best suit their convenience.

HOTELS.

The Mansion House will be considered headquarters during the Reading Session. Below is given a list of hotels with rates per day.

Mansion House, American plan	$3.00
Hotel Penn, American plan	3.00
American House, American plan	2.50
Hotel Brighter, American plan	2.50
Merchants House, American plan	2.50
United States Hotel, American plan	2.50
Highland House, American plan	2.50
Woodvale Inn, American plan	2.50
Aldine Private Boarding House, American plan	2.00
Winsor Hotel, European plan	1.00
Folgers (with café), European plan	$ .75 to 1.00
Crystal Palace, European plan,	$ .75 to 1.00

The Highland House is a summer resort, situated on Neversink Mountain, 15 minutes' ride from Ninth and Penn Streets; cars every half hour.

Woodvale Inn is on the north slope of Neversink Mountain, 15 minutes' ride from Ninth and Penn Streets; cars every half hour.

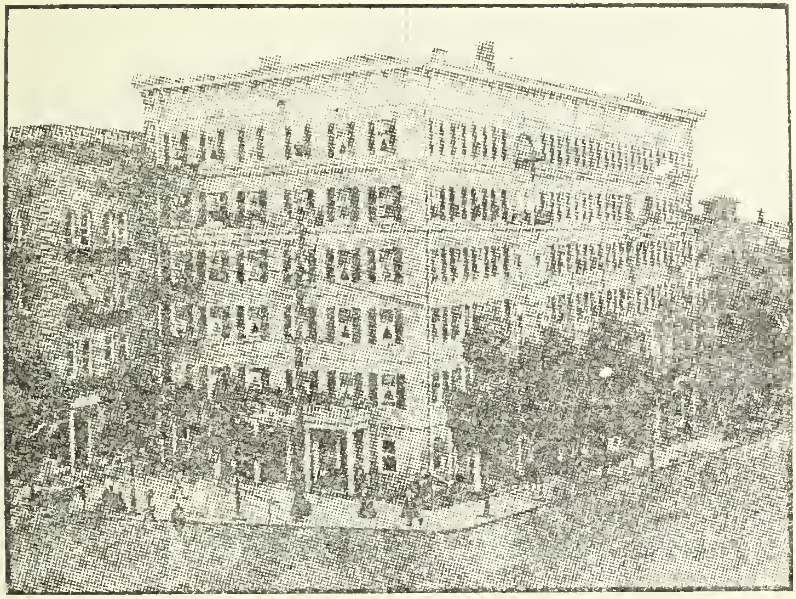
A number of cafés and restaurants are located near the place of meeting where meals will be served on the European plan.

Members in securing rooms will please communicate direct with hotels; if not satisfactory, refer the same to Dr. John F. Feick, chairman of Committee on Hotels.

All meetings and exhibits will be held in Rajah Temple, one and a half squares from the large hotels and the same distance from the Franklin Street station on the Reading Railway.

POST-OFFICE.

A post-office department will be opened at Rajah Temple where members may receive their mail. Mail should be addressed in care of Medical Society of the State of Pennsylvania, Rajah Temple, Reading, Pa.



MANSION HOUSE. HEADQUARTERS.

HOTEL PENN.

RAJAH TEMPLE. PLACE OF MEETING.

MEMBERS OF THE HOUSE OF DELEGATES.

(The first name under each county is the president, the off-set names are the alternates.)

ADAMS COUNTY SOCIETY.

Robert B. Elderdice, McKnightstown, Pres.
J. Lawrence Sheetz, New Oxford.

ALLEGHENY COUNTY SOCIETY.

Robert W. Stewart, Pittsburg, Pres.
Ewing W. Day, Pittsburg.
  Horace S. McClymonds, Wilkinsburg.
  Willison H. McCombs, Pittsburg.
Raleigh R. Huggins, Pittsburg.
  Charles E. Linderman, Pittsburg.
  James C. Burt, Pittsburg.
Adolph Koenig, Pittsburg.
  William C. Wallace, Ingram.
  Curtis C. Mechling, Allegheny.
William S. Foster, Pittsburg.
  Richard E. Brenneman, Pittsburg.
  A. Ralston Matheny, Pittsburg.
Edward B. Heckel, Pittsburg.
  Charles J. Ellis, Pittsburg.
  Alexander R. Hampsey, Pittsburg.
Frank L. McCready, Sewickley.
  James I. Johnston, Pittsburg.
  Walter F. Donaldson, Pittsburg.
Theodore J. Elterich, Allegheny.
  Laird O. Miller, Allegheny.
  John W. Boyce, Pittsburg.

ARMSTRONG COUNTY SOCIETY.

Sharon P. Heilman, Kittanning, Pres.

BEAVER COUNTY SOCIETY.

William W. Simpson, New Brighton, Pres.

BEDFORD COUNTY SOCIETY.

Walter P. Trimbath, Everett, Pres.
Simon H. Gump, Bedford.
  Walter de la M. Hill, Everett.
  Edmund L. Smith, Schellburg.

BERKS COUNTY SOCIETY.

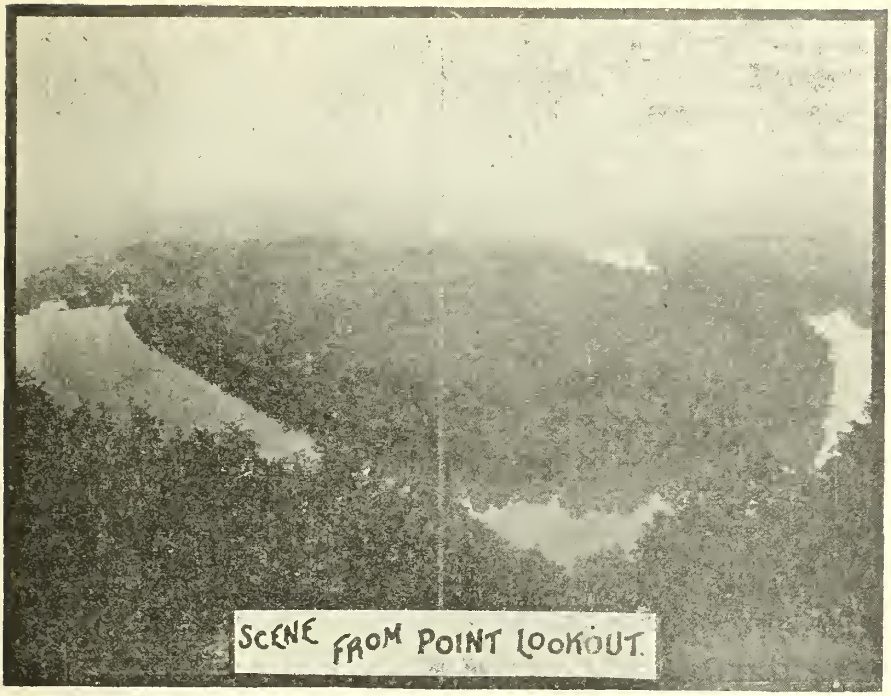
Irvin H. Hartman, Reading, Pres.

BLAIR COUNTY SOCIETY.

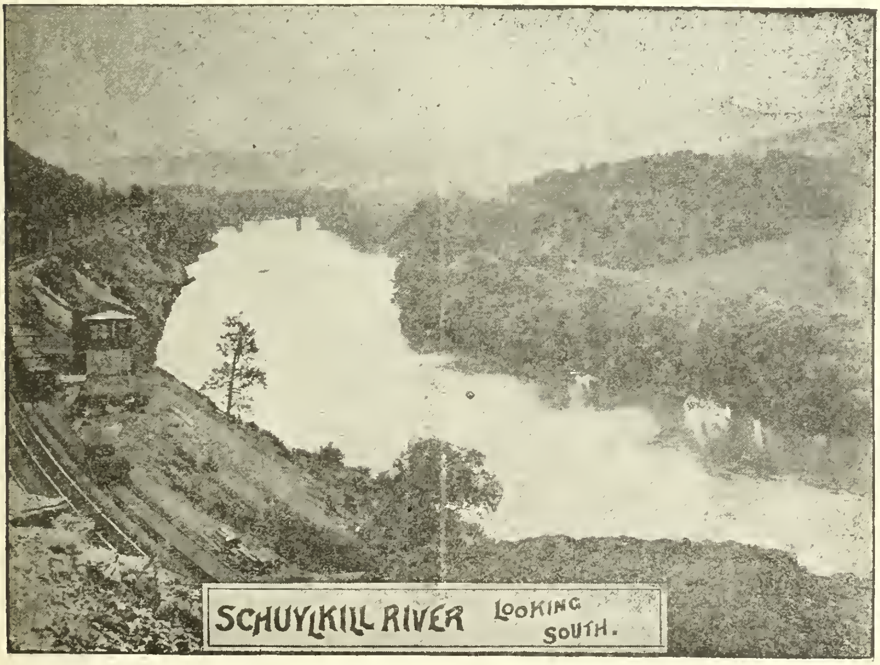
W. Albert Nason, Roaring Springs, Pres.
Davis A. Hogue, Altoona.
  Charles Long, Altoona.
  Joseph U. Blose, Altoona.

BRADFORD COUNTY SOCIETY.

Harry Spaulding Fish, Sayre, Pres.



SCENE FROM POINT LOOKOUT.



SCHUYLKILL RIVER LOOKING SOUTH.

THE BRIGHTER HOTEL ⁘ 2ND AND PENN ST., READING, PA.

Perley N. Barker, Troy.
C. Manville Pratt, Towanda.
Charles M. Woodburn, Towanda.

BUCKS COUNTY SOCIETY.

John B. Carrell, Hatboro, Pres.
George M. Grim. Ottsville.
Alfred E. Fretz, Sellersville.
E. Stevens Coburn, Plumsteadville.

BUTLER COUNTY SOCIETY.

Robert B. Greer, Butler, Pres.
Raymond H. Pillow, Butler.
L. Leo Doane, Butler.
Leslie R. Hazlett, Butler.

CAMBRIA COUNTY SOCIETY.

William S. Wheeling, Spangler, Pres.
William D. Haight, Johnstown.
John B. Woodruff, Johnstown.

CARBON COUNTY SOCIETY.

Clinton J. Kistler, Lehighton, Pres.

CENTER COUNTY SOCIETY.

Theodore S. Christ. State College, Pres.
C. Sumner Musser, Aaronsburg.
John R. G. Allison, Center Hall.
Walter J. Kurtz, Howard.

CHESTER COUNTY SOCIETY.

Charles E. Woodward, West Chester, Pres.
David P. Rettew, Coatesville.
George B. Umsted, Phoenixville.
Robert W. Howard, Atglen.

CLARION COUNTY SOCIETY.

John B. Miller, Sligo, Pres.

CLEARFIELD COUNTY SOCIETY.

William B. Henderson, Philipsburg, Pres.

CLINTON COUNTY SOCIETY.

Saylor J. McGhee, Mill Hall, Pres.
George D. Green. Lock Haven.

COLUMBIA COUNTY SOCIETY.

Edward L. Davis, Berwick, Pres.
Samuel B. Arment, Bloomsburg.
Ralph E. Miller, Bloomsburg.
George L. Reagan, Berwick.

CRAWFORD COUNTY SOCIETY.

A. Wilber Clouse. Geneva, Pres.

CUMBERLAND COUNTY SOCIETY.

T. Wallbank Preston, Balfour, Pres.
Americus R. Allen, Carlisle.
John W. Bowman, Lemoyne.
Ferdinand Shoemaker, Carlisle.

DAUPHIN COUNTY SOCIETY.

Charles E. L. Keene, Harrisburg. Pres.

DELAWARE COUNTY SOCIETY.

Jonathan L. Forwood, Chester, Pres.
Frank L. Hamilton, Chester.
L. Haines Crothers, Chester.
Maurice A. Neufeld, Chester.

ELK COUNTY SOCIETY.

James G. Flynn, Ridgway, Pres.

ERIE COUNTY SOCIETY.

George S. Ray, Erie. Pres.

FAYETTE COUNTY SOCIETY.

Lee M. Sprowls. Uledi. Pres.
Andrew O'Neil, Uniontown.
Thomas H. White. Connellsville.
William W. Osborn, Upper Middletown.

FRANKLIN COUNTY SOCIETY.

John W. Croft, Waynesboro, Pres.
John J. Coffman. Scotland.
Charles M. McLaughlin, Greencastle.

GREENE COUNTY SOCIETY.

Ira D. Knotts. Davistown, Pres.

HUNTINGDON COUNTY SOCIETY.

Charles A. R. McClain, Mt. Union, Pres.
Charles B. Bush. Orbisonia.
William J. Campbell, Mt. Union.
William H. Sears, Huntingdon.

INDIANA COUNTY SOCIETY.

Homer M. Wellman, Blairsville, Pres.
Elmer Onstott, Saltsburg.
William J. Shields, Kent.
William J. Pennock, Blairsville.

JEFFERSON COUNTY SOCIETY.

Spencer M. Free, DuBois, Pres.

Harry B. King, Reynoldsville.
Joseph P. Benson, Punxsutawney.
John C. Sayers, Reynoldsville.

JUNIATA COUNTY SOCIETY.

Isaac N. Grubb, Thompsontown, Pres.
Amos W. Shelley, Port Royal.
D. M. Crawford, Mifflintown.
W. H. Haines, Thompsontown.

LACKAWANNA COUNTY SOCIETY.

Lucius C. Kennedy, Scranton, Pres.

LANCASTER COUNTY SOCIETY.

George R. Rohrer, Lancaster, Pres.
Frank G. Hartman, Lancaster.
Michael W. Hurst, Talmadge.
Abraham G. Bowman, Lancaster.
Alexander R. Craig, Philadelphia.
LeRoy K. Leslie, Bareville.
J. Henry Musser, Lampeter.

LAWRENCE COUNTY SOCIETY.

Jesse R. Cooper, New Castle, Pres.

LEBANON COUNTY SOCIETY.

William M. Guilford, Lebanon, Pres.

LEHIGH COUNTY SOCIETY.

Nathaniel C. E. Guth, Allentown, Pres.
William H. Hartzell, Allentown.
Frederick A. Fetherolf, Allentown.
Peter O. Bleiler, Allentown.

LUZERNE COUNTY SOCIETY.

J. Irving Roe, Wilkes-Barre, Pres.
Alexander G. Fell, Wilkes-Barre.
Anthony F. Dougherty, Ashley.
Walter Lathrop, Hazleton.
Thomas A. James, Ashley.

LYCOMING COUNTY SOCIETY.

Horace G. McCormick, Williamsport, Pres.
Benjamin H. Detwiler, Williamsport.
Sidney Davis, Milton.
William E. Glosser, Williamsport.

M'KEAN COUNTY SOCIETY.

Martin J. Sweeney, Kane, Pres.

MERCER COUNTY SOCIETY.

John A. Blair, Greenville, Pres.
George W. Stoyer, Sharpsville.
Augustus M. O'Brien, Sharon.
John H. Twitmyer, Sharpsville.

MIFFLIN COUNTY SOCIETY.

Harry W. Sweigart, Lewistown, Pres.
Benjamin R. Kohler, Reedsville.
Robert T. Barnett, Lewistown.
Alexander S. Harshberger, Lewistown.

MONROE COUNTY SOCIETY.

J. Anson Singer, East Stroudsburg, Pres.

MONTGOMERY COUNTY SOCIETY.

Oliver C. Heffner, Pottstown, Pres.
Philip Y. Eisenberg, Norristown.
Frederick B. Allen, North Wales.
Herbert A. Bostock, Norristown.

MONTOUR COUNTY SOCIETY.

William H. Krickbaum, Danville, Pres.
Robert S. Patten, Danville.
George A. Stock, Danville.
Harry E. Klase, Danville.

NORTHAMPTON COUNTY SOCIETY.

Sterling D. Shimer, Easton, Pres.
William P. Walker, South Bethlehem.
Charles McIntire, Easton.
E. T. Wilheim, South Bethlehem.

NORTHUMBERLAND COUNTY SOCIETY.

Joseph W. Schoffstall, Sunbury, Pres.
Charles H. Swenk, Sunbury.
Horatio W. Gass, Sunbury.

PERRY COUNTY SOCIETY.

W. Homer Hoopes, Newport, Pres.
Alburtis T. Ritter, Loysville.
W. J. Allen, Landisburg.
A. Russell Johnston, New Bloomfield.

PHILADELPHIA COUNTY SOCIETY.

James B. Walker, Philadelphia, Pres.
Lewis H. Adler, Jr., Philadelphia.
Charles W. Burr, Philadelphia.
Henry W. Cattell, Philadelphia.
Judson Daland, Philadelphia.
F. Mortimer Cleveland, Philadelphia.
Charles A. E. Codman, Philadelphia.
Samuel G. Dixon, Ardmore (Montgomery Co.).
Albert M. Eaton, Philadelphia.
Frank Embery, Philadelphia.
Thomas H. Fenton, Philadelphia.
Joseph Farley, Philadelphia.
Samuel P. Gerhard, Philadelphia.
M. Howard Fussell, Philadelphia.
John J. Gilbride, Philadelphia.
R. Max Goepp, Philadelphia.
Wilmer Krusen, Philadelphia.
William H. Good, Philadelphia.
William S. Higbee, Philadelphia.
Charles K. Mills, Philadelphia.
John H. Jopson, Philadelphia.
A. O. J. Kelly, Philadelphia.
J. W. McConnell, Philadelphia.
Henry Leffman, Philadelphia.
C. B. Longenecker, Philadelphia.
Robert L. Pitfield, Philadelphia.
George P. Müller, Philadelphia.
William E. Parke, Philadelphia.
Jay F. Schamberg, Philadelphia.
Horace K. Regar, Philadelphia.
R. C. Rosenberger, Philadelphia.
J. Gurney Taylor, Philadelphia.
John M. Swan, Philadelphia.
W. Hersey Thomas, Philadelphia.
William M. Welch, Philadelphia.
James B. Walker, Philadelphia.
T. H. Weisenburg, Philadelphia.

POTTER COUNTY SOCIETY.

John B. Colcord, Port Allegany, Pres.

SCHUYLKILL COUNTY SOCIETY.

George H. Moore, Schuylkill Haven, Pres.
Christian Lenker, Schuylkill Haven.
G. R. S. Corson, Pottsville.
Thomas J. Birch, Port Carbon.

SNYDER COUNTY SOCIETY.

Benjamin F. Beale, McKees Half Falls, Pres.

SOMERSET COUNTY SOCIETY.

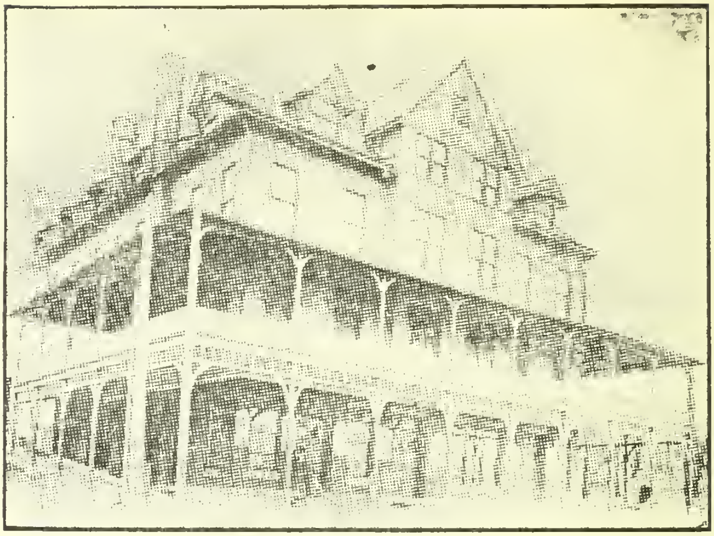
Charles P. Large, Meyersdale, Pres.
Henry Wilson, Somerset.
William T. Rowe, Meyersdale.

SULLIVAN COUNTY SOCIETY.

M. E. Hermann, Dushore, Pres.
Arthur J. Bird, Overton.
John R. Davies, Forksville.
H. Irvin Woodhead, Forksville.

SUSQUEHANNA COUNTY SOCIETY.

William B. Beaumont, West Auburn, Pres.
John G. Wilson, Montrose.
Frederick L. Grander, Forest City.
Alpheus B. Fitch, Factoryville (Wyoming Co.).



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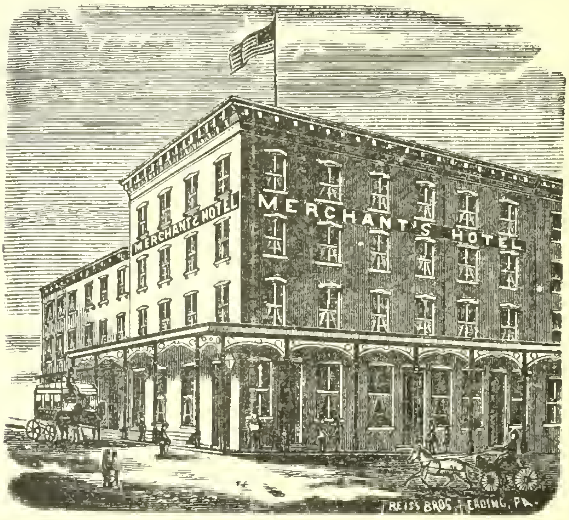

TIOGA COUNTY SOCIETY.

Farnum S. Shaw, Wellsboro, Pres.

UNION COUNTY SOCIETY.

James Kleckner, Mifflinburg, Pres.

VENANGO COUNTY SOCIETY.

Harry S. Stone, Franklin, Pres.
Frederick W. Brown, Franklin.
John C. O'Day, Oil City.
J. Moorehead Murdock, Polk.

WARREN COUNTY SOCIETY.

Michael V. Ball, Warren, Pres.
Morris S. Guth, Warren.
James Gass, Sheffield.
John W. Hamilton, Warren.

WASHINGTON COUNTY SOCIETY.

William H. Alexander, Canonsburg, Pres.
John B. Donaldson, Canonsburg.
James W. McKennan, Washington.
Boyd A. Emory, Dunningsville.
Cephas T. Dodd, Washington.
Olie P. Dearth, Washington.
Joseph W. Hunter, Charleroi.

WAYNE COUNTY SOCIETY.

Robert W. Brady, Honesdale, Pres.
Atherton B. Stevens, South Canaan.
F. W. Corson, Waymart.

WESTMORELAND COUNTY SOCIETY.

Elmer E. McAdoo, Ligonier, Pres.
Edward P. Weddell, Scottdale.
Claude W. McKee, Scottdale.
Levi T. Gilbert, Scottdale.

WYOMING COUNTY SOCIETY.

Herbert L. McKown, Tunkhannock, Pres.
Hiram W. Kelly, Nicholson.
Bert E. Bidleman, Tunkhannock.
Van C. Decker, Nicholson.

YORK COUNTY SOCIETY.

Israel H. Betz, York, Pres.
William F. Bacon, York.
Edmund W. Meisenhelder, York.
Benjamin F. Spangler, York.

MEETING OF THE TRUSTEES.

ROOM 4, SECOND FLOOR, REAR OF STAGE.

The Trustees will meet Monday, September 23, 1907, 7 P. M., and daily thereafter at such hours as may be determined upon.

HOUSE OF DELEGATES.

The House of Delegates will meet in Room 1, Second Floor, Monday, September 23, 1907, 8 P. M.

The President of the Society, Isaac C. Gable, York, will call the House to order, and it is recommended that the following program subject to the approval of the House constitute the order of business.

- Report of Committee on Credentials.
- Roll Call.
- Appointment of Reference Committee.
- Reports of
  - Secretary.
  - Treasurer.
  - Board of Trustees and Council.
  - Judicial Council.
  - Individual Councilors.
  - District Censors.
  - Committee on Arrangements.
  - Committee on Scientific Work.
  - Committee on Public Policy and Legislation.
  - Committee on Archives.
  - Committee on Transportation and Place of Meeting.
  - Committee on Malpractice.
  - Committee on Asylum for Inebriates.
  - Committee on Religious Newspaper Advertising.
  - Committee to Draft Regulations for the Registration of Section Members and the Election of Section Officers.
  - State Board of Medical Examiners.
  - Delegates to other societies.
- Transaction of business.
- Fixing time of next meeting.
- Adjournment.

The House of Delegates will meet in Room 2, Third Floor, front, on Wednesday at 8:45 A. M. for the Election of Officers and the Selection of Place for next Session. Other meetings of the House will be held at hours determined by the delegates.

PRELIMINARY REPORT OF THE COMMITTEE ON SCIENTIFIC WORK ON THE PROGRAM FOR THE READING SESSION.

The Committee on Scientific Work has about completed the program for the Reading session, and, as a result of the suggestions at Bedford Springs and elsewhere during the year, the committee has introduced certain innovations with the idea of making the session more popular and successful.

The annual orations of this year will be delivered at the general meeting on Wednesday, instead of before the separate sections. The section officers, working together, have allowed to each section one meeting which will be less technical and more popular than the others.

Following the action of the Bedford Springs session, there will be on Tuesday night a dinner and meeting of the secretaries of the county societies, and, in response to resolutions passed by different societies, there will be at 7:30 P. M., Tuesday evening, a general meeting devoted to the discussion of certain subjects of interest to the profession.

CONFERENCE OF SECRETARIES.

KRICK'S CAFÈ.

TUESDAY, SEPTEMBER 24, 5 P. M.

This part of the program has been placed under the charge of John B. Donaldson of Washington County, who has issued a circular in reference to this meeting of which the following is an extract.

This feature of having a separate section for the secretaries and councilors of the state has for its object:—

1st. The better acquaintance and good fellowship that should hold among the secretaries.

2d. Advice, consolation and encouragement, for every conscientious secretary has periods when he says "what's the use, these fellows don't care for the society," etc.

3d. The better organization of the state, and everything that may come up that will be of use to the secretary.

It is the intention to make this a social affair, and the meeting will be held at the dinner table, where men loosen up and talk more freely. The expense of the dinner will be paid by the society.

A permanent organization will be effected at this meeting, officers elected, and it is hoped that the yearly meeting of the secretaries will become a regular feature that will be of much use to all of us. The following papers will be read:—

What Can a Secretary Do to Get New Members? JOHN J. COFFMAN, Scotland.

The Relation of the Secretary to the Society and the Profession.
ANTHONY F. MYERS, Blooming Glen.

The Young Men in the Society; How to Interest Them.
HOWARD C. FRONTZ, Huntingdon.

The Lazy Secretary and His Baneful Effect on the Society.
ERNEST U. BUCKMAN, Wilkes-Barre.

Dr. George H. Simmons, secretary of the A. M. A., Dr. C. L. Stevens and Dr. George W. Wagoner will be present and give us short talks.

THE SPECIAL MEETING.

In response to the following identical resolutions passed by the Berks, Bucks, Chester, Erie, Huntingdon, Lehigh, Philadelphia and York county medical societies, the Committee on Scientific Work has arranged a program for Tuesday evening, beginning at 7:30 o'clock, to discuss the subjects referred to in the resolutions. It is impossible to take up all the subjects in the time given, but we think that the men who will read these papers will make this meeting a special feature of the session of the State Society this year,

"*Whereas*, Social, industrial and business conditions have undergone vast change during the present generation, and as these in some respects threaten the solidarity of the medical profession and the general welfare of its individual practitioners, it is our belief that a free discussion of various phases of these altered conditions is urgently demanded. Therefore, be it

"*Resolved*, That, in our opinion, the following subjects be made the prominent feature of the official program at the next session of the State Medical Society, to be held at Reading; that they take precedence of all scientific business excepting only the annual orations, even though the Committee on Scientific Work may already have arranged a tentative program for said session; that said committee act promptly in this matter so that the PENNSYLVANIA MEDICAL JOURNAL shall be able to print in full this communication together with the action of said committees in its March or April number; that said periodical be directed to make editorial mention of these facts and to request volunteer papers on these subjects to be read at the Reading session. The titles of the subjects referred to above, are:—

'Contract Practice, Legitimate and Illegitimate.'

'Lodge Practice, Legitimate and Illegitimate.'

'Low Fees Paid General Practitioners in Pennsylvania, Their Evil Results on the Public and the Physician.'

'What Stand Shall the United Pennsylvania Medical Profession Take on the Reduction of Fees by the Life Insurance Company Combine?'

'Responsibility of Medical Schools for Intellectual and Professional Inferiority of Their Graduates, for Failure to Instruct Students in the Business Side of Their Profession, and for Neglect to Urge Graduates to Join Their County Societies and Otherwise Advance Organization of Our Ranks.'

'The Advisability of Suggesting to the American Medical Association the Founding of a Mutual Medical Life Insurance Company and also a Mutual Casualty Company.'

'The Harm to Both Public and Physician of the Erroneous Principles of State Aid to Local Hospitals?' "

THE ELECTION OF SECTION OFFICERS.

At the Bedford Springs session, a committee consisting of W. L. Estes, Samuel D. Risley and Lawrence Litchfield was appointed with the power to draw up regulations for the registration of section members and the election of section officers under the new bylaws. The report of this committee follows, and the elections will take place during the meeting of the special sections on Wednesday.

"1st: The last three retiring chairmen of each section shall constitute an Executive Committee for the sections respectively. The duties of these Executive Committees shall be to attend to all the specific business of the sections for the ensuing year. For 1907, however, the retired chairman, the acting chairman, and a third member selected by these two, shall constitute the Executive Committee of each section. In 1908 the two retired chairmen and the acting chairman shall form this Committee, and after this the regular order and method shall be followed.

"2d. Each member when registered at the annual session shall specify on a blank provided for that purpose the section with which he wishes to be identified, and in order to indicate the affiliation, each member shall at this time be provided with a button; blue shall indicate the Medical Section, red the Surgical Section, and yellow the Section on Specialties.

"3d. In all ballots of a section only those wearing the button of that section shall be entitled to vote.

"4th. The Executive Committee shall report in each section on the second day of the session, and the ballot for officers for the ensuing year shall follow immediately after the report. A majority vote of those present shall elect."

PROGRAM.

GENERAL MEETING.

ROOM 1, SECOND FLOOR.

TUESDAY, SEPTEMBER 24, 1907, 10 A. M.

Call to order by the President.
ISAAC C. GABLE, York.

Prayer, REV. RICHARD F. BOYLE, D.D., Pastor, M. E. Church of the Holy Cross.

Presentation of Program.
F. W. FRANKHAUSER, Reading, Chairman, Committee on Arrangements.

Address of Welcome.
HON. GUSTAV A. ENDLICH, Additional Law Judge of Berks County.

Address of Welcome.
HON. EDWIN R. GERBER, Mayor of the City of Reading.

Address of Welcome.
IRVIN H. HARTMAN, Reading, President of the Berks County Medical Society.

The State of the Society.
C. L. STEVENS, Athens.

President's Address. ISAAC C. GABLE, York.

New Business.

Adjournment.

WEDNESDAY, SEPTEMBER 25, 9 A. M.

Oration on Medicine: Public Health, Private Practice. SAMUEL WOLFE, Philadelphia.

Oration on Surgery.
WILLIAM L. RODMAN, Philadelphia.

Oration on Genitourinary Surgery.
J. HARTLEY ANDERSON, Pittsburg.

Oration on Bacteriology.
MICHAEL V. BALL, Warren.

Oration on Dermatology.
HENRY W. STELWAGON, Philadelphia.

Oration on Ophthalmology.
S. LEWIS ZIEGLER, Philadelphia.

Imbecility and Crime and the Legal Restraint of Imbeciles. CHAS. W. BURR, Philadelphia.

ABS. Many crimes are committed by imbeciles. The laws of Pennsylvania permit imbeciles to be removed from institutions for the care of imbeciles at any time, notwithstanding their condition. The result of this is that many of these persons enter on a criminal career as soon as they leave the institution. It would be much better if imbeciles admitted to institutions should be kept there for life unless a committee of physicians and laymen determine that they are safe to be let at large. The intellectual training of imbeciles without moral sense or with criminal instincts leads only to evil. It increases the ability to commit crimes. They should be taught nothing but manual labor and should be segregated in farms where they could earn their living.

Discussion by CHARLES K. MILLS, Philadelphia, and THEODORE DILLER, Pittsburg.

The Teaching of Therapeutics in Medical Schools. J. CHRIS LANGE, Pittsburg.

The Misfortunes of Scientific Medicine.
JOHN C. O'DAY, Oil City.

ABS. That the science of medicine has had misfortunes is not to be regretted. The misfortunes which have hampered other of the sciences. The science of medicine has not been alone in suffering misfortunes. The greatest misfortune besetting the tree of scientific medicine to-day is the schismatic element, born of perverted commercialism. The failure of the masses to understand or appreciate the spirit in which the profession works. The masses are not exacting laws to protect the science that is protecting them.

THURSDAY, SEPTEMBER 26, 2 P. M.

Pathology and Classification of Nephritis.
JOSEPH MCFARLAND, Philadelphia.

The Circulation in Nephritis.
WILLIAM B. STANTON, Philadelphia.

Uremia. JAMES M. ANDERS, Philadelphia.

Symptomatology and Treatment.
JAMES I. JOHNSTON, Pittsburg.

Discussion opened by JAMES TYSON, Philadelphia, and ADOLPH KOENIG, Pittsburg.

The Eye and the Kidney.
GEORGE E. DE SCHWEINITZ, Philadelphia.

Modern Methods of Diagnosis in Surgical Diseases of the Kidney.
CHARLES P. NOBLE, Philadelphia.

ABS. Description of the application of cystoscopy through the air distended and the water distended bladder, the catheterization of the ureters, the microscopical studies of the urine, cryoscopy, the bilateral exploratory incision of Edebohl, and the more common method of palpation, to the diagnosis of the surgical diseases of the kidney.

The Surgical Aspects of Floating Kidney.
J. CHALMERS DACOSTA, Philadelphia.

The Treatment of Surgical Affections of the Kidney.
EDWARD MARTIN, Philadelphia.

ABS. Surgical treatment of nephritis and nephralgia; profuse and persistent hemorrhage; of calculus, renal, pelvic, urethral; of tuberculosis; of acute and subacute renal infections other than tuberculous; of hydronephrosis; of neoplasm.

SPECIAL MEETING.

ROOM 1, SECOND FLOOR.

TUESDAY, SEPTEMBER 24, 7:30 P. M.

Lodge Practice, Legitimate and Illegitimate.
GEORGE E. HOLTZAPPLE, York.

Discussion opened by ALBERT M. EATON, Philadelphia.

What Stand Should the United Pennsylvania Medical Profession Take on the Reduction of Fees by Life Insurance Companies.
J. NEWTON HUNSBERGER, Skippack.

The Responsibility of Medical Schools for Intellectual and Professional Inferiority of Their Graduates, for Failure to Instruct Students in the Business Side of Their Profession, and for Neglect to Urge Graduates to Join Their County Societies and Otherwise Advance Organization of Our Ranks. HENRY BEATES, JR., Philadelphia.

The Harm to Both Public and Physician of the Erroneous Principles of State Aid to Local Hospitals.
JOSEPH PRICE, Philadelphia.

SECTION ON MEDICINE.

ROOM 1, SECOND FLOOR.

TUESDAY, SEPTEMBER 24, 2 P. M.

Chairman—JOHN A. LICHTY, 4634 Fifth Ave., Pittsburg.

Secretary—H. HERBERT HERBST, Allentown.

Executive Committee—LAWRENCE LITCHFIELD, JOHN A. LICHTY, Pittsburg, and JAMES H. MCKEE, Philadelphia.

A Review of the Epidemic of Typhoid Fever in Scranton.
WILLIAM E. KELLER, Scranton.

Diet in Typhoid Fever.
LAWRENCE LITCHFIELD, Pittsburg.

Discussion opened by JOHN H. MUSSER, Philadelphia, and RAYMOND H. PILLOW, Butler.

Diagnosis and Treatment of Pernicious Anemia.
DAVID S. FUNK, Harrisburg.

ABS. Diagnosis: appearance of patient: color of skin, facial expression, nutrition. Age, sex, environment, subjective symptoms. Physical examination: circulatory disturbances, absence of evidence of organic disease. Blood picture. Differential diagnosis: acute and subacute endocarditis, gastric carcinoma, some spinal affection, typhoid fever and meningitis. Treatment: environment, medicinal, organotherapy.

Gastrointestinal Symptoms of Pernicious Anemia. J. DUTTON STEELE, Philadelphia.

Report of a Case of Pernicious Anemia.
ALEXANDER S. HARSHBERGER, Lewistown.

Discussion opened by DAVID RIESMAN, Philadelphia.

Recent Advances in Tuberculosis, or Latest Researches in Tubercular Disease.
EDGAR M. GREEN, Easton.

Sanatorium Treatment of Pulmonary Tuberculosis. HENRY M. NEALE, Upper Lehigh.

The Duty of the State to the Physician, and the Physician to the State.
THOMAS G. SIMONTON, Pittsburg.

Treatment of Hemorrhage of the Lungs.
ALBERT H. FRANCINE, Philadelphia.

Discussion opened by H. R. M. LANDIS, Philadelphia.

WEDNESDAY, SEPTEMBER 25, 9 A. M.

(See Program for General Meeting.)

WEDNESDAY, SEPTEMBER 25, 2 P. M.

Etiology and Pathogenesis of Diabetes.
DAVID L. EDSALL, Philadelphia.

Diagnosis of Glycosuria and Diabetes.
ALFRED STENGEL, Philadelphia.

Discussion opened by JOSEPH SAILER and JOHN C. DACOSTA, Philadelphia.

The Great Black Plague.
ELLA RITTER, Williamsport.

Observations upon Indicanuria.
JUDSON DALAND, Philadelphia.

The Importance and Value of Physical Therapeutics. MARTIN L. BARSHINGER, York.

Rachitis of the Nervous System.
THEODORE J. ELTERICH, Allegheny.

Physical Defects of School Children, Causing Subnormal and Mentally Deficient Pupils.
SOLOMON W. NEWMAYER, Philadelphia.

Nephritis Complicating or Following Measles.
J. P. CROZER GRIFFITH, Philadelphia.

Dysentery in a Boy Three Years Old, Complicated by the Presence of a Tapeworm.
HARRY A. SPANGLER, Carlisle, and MAURICE OSTHEIMER, Philadelphia.

THURSDAY, SEPTEMBER 26, 9 A. M.

Acute Gastrectasia with Report of a Case.
ALBERT E. ROUSSEL, Philadelphia.

The Clinical Significance of Pain in the Epigastrium.
JOHN J. GILBRIDE, Philadelphia.

Diseases of the Gall Bladder and Ducts.
JOHN B. DEAVER, Philadelphia.

Hemochromatosis with Cirrhosis of the Liver, with Report of a Case.
GEORGE E. HOLTZAPPLE, York.

Hepatoptosis with Report of Two Cases.
CHARLES H. MINER, Wilkes-Barre.

Too Much Diet and Not Enough to Eat.
ALBERT BERNHEIM, Philadelphia.

Physiological Albuminuria, with Especial Reference to the Appearance of Albumin in the Urine after Prolonged Exertion.
CLARENCE R. PHILLIPS, Harrisburg.

Anthrax.
FRANKLIN B. ROYER and BURWELL E. HOLMES, Philadelphia Municipal Hospital.

General Principles in Medicine.
WILLIAM J. K. KLINE, Greensburg.

Thyroid Extract in Treatment of Epilepsy and Migraine Apropos of Ten Cases.
ALFRED GORDON, Philadelphia.

ABS. Four cases of migraine and six cases of essential epilepsy did not respond to the ordinary treatment. As these two affections are very probably due to a defective metabolism, the author has tried a medication which has proved to be of some use in diseases depending upon perverted function of ductless gands. The result was satisfactory.

SECTION ON SURGERY.

Chairman—JOHN H. GIBBON, 1608 Spruce St., Philadelphia.

Secretary—CHARLES P. STAHR, 17 East Walnut St., Lancaster.

Executive Committee—WILLIAM L. ESTES, South Bethlehem; JOHN H. GIBBON, Philadelphia; GEORGE W. GUTHRIE, Wilkes-Barre.

ROOM 2, THIRD FLOOR FRONT.

TUESDAY, SEPTEMBER 24, 2 P. M.

An Easy Method of Making Osteoplastic Flaps in Cranial Surgery.
JOHN B. ROBERTS, Philadelphia.

ABS. Osteoplastic resection of the skull is often more satisfatory than simple trephining. Saws driven by electric motors and other more or less complicated devices are expensive and sometimes unavailable. A segment trephine and a wedge-shaped nasal saw are all that are necessary.

The Repairing of Clefts of the Palate and the Lip.
ALEXANDER R. CRAIG, Philadelphia.

Some New Points in the Technic of the Operation for Appendicitis in Its Various Stages. ERNEST LAPLACE, Philadelphia.

Intestinal Tears Following Unoperated Appendiceal Abscesses and Their Medico-Legal Relations.
AMERICUS R. ALLEN, Carlisle.

The Clinical Significance of Certain Abdominal Pains in Their Relation to Atypical Types of Appendicitis.
L. JAY HAMMOND, Philadelphia.

ABS. The comparatively frequent occurrence of appendicitis in the absence of classic symptoms; the cause of same. Difficulties of recognition because of a similarity of the clinical picture presented to disease of other organs, viscera or neighboring points. Symptoms constantly present, and usually increasing, which should aid in diagnosis. Usually chronic in course. Prognosis.

Postoperative Phlebitis.
GEORGE W. GUTHRIE, Wilkes-Barre.

Suppurating Parotitis Following Abdominal Operations.
WILLIAM E. PARKE, Philadelphia.

ABS. Details of the operation and the subsequent course of the case. Rarity of the condition. Reference to literature and experience of operators in Philadelphia. Discussion of its etiology.

The Differential Diagnosis between Retroperitoneal and Intraperitoneal Injuries, with Illustrative Cases.
DANIEL A. WEBB, Scranton.

Chronic Cystic Mastitis.
JOHN SPEESE, Philadelphia.

ABS. Pathology of the disease including normal involution of the breast, abnormalities of which lead on to cystic mastitis; danger of malignant degeneration. Symptoms caused, and the differential diagnosis from those affections with which chronic cystic mastitis is most likely to be confused. Treatment: Advantages of the so-called plastic operation in the majority of cases. Results obtained in treatment with report of the cases studied.

Tuberculous Adenitis in the Adult.

George P. Müller, Philadelphia.

Myxoma of the Pelvis, True and False.

George Erety Shoemaker, Philadelphia.

The Treatment of Compound Fractures by the Use of Clamps.

J. C. Biddle, Fountain Springs.

The Treatment of Fractures of the Neck of the Femur.

Otto C. Gaub, Pittsburg.

Wednesday, September 25, 9 A. M.

(See program for General Meeting.)

Wednesday, September 25, 2 P. M.

A Discussion of Legislation Concerning the Registration of Nurses in the State of Pennsylvania.

Charles P. Noble, Philadelphia.

Abs. The results of an inquiry into the present status of the training of nurses in the state of Pennsylvania. What percentage of the hospitals in the state can train nurses in such a manner that they will be able to comply with the requirements of such a bill as the one introduced into the last legislature. An expression of opinion from the directors, the medical staffs, and the chief nurses of the hospitals of Pennsylvania as to what constitutes an adequate training for nurses.

Perforations of the Gastrointestinal Tract from Ingested Foreign Bodies.

George G. Ross, Philadelphia.

Abs. A report of unusual cases, and a review of cases of perforation of the gastrointestinal tract by objects which have been swallowed. The vagueness of the cause renders a diagnosis difficult.

Analysis of Gastric Contents Following Gastroenterostomy.

Clement R. Jones, Pittsburg.

Abs. Gradual increase of free and combined hydrochloric acid after test meals, at intervals of two weeks or more, following operation. Increase of muscular control over anastomotic opening being responsible for changes in the result of analysis from time to time. Larger opening recommended when the analysis prior to operation shows normal secretion of the stomach or excess of free hydrochloric acid. The necessity of keeping cases under observation as to condition of stomach content and feces for a long time after operation in order to secure the best results. Indications for operation.

Referred Pain in Surgical Conditions.

William L. Estes, South Bethlehem.

Abs. Instances of referred pain are common and sometimes lead to grave mistakes in surgical practice. The study and appreciation of the manifestations of referred pain are therefore important. Referred pain may be placed under four heads or categories, namely: (1) Manifestations of pain in the peripheral or terminal filaments of a nerve when the irritation occurs at the root or in the continuity of the nerve. (2) Pain expressed in the continuity of a nerve from irritation of the terminal filaments. (3) Expression of pain in a communicating or assisting group of nerves from irritation of an associated trunk or distribution. (4) Vicarious referred pain, or pain expressed in one of a pair of organs when the other is the diseased organ.

Postoperative Complications; Prophylaxis; Methods of Early Diagnosis.

Frank F. Simpson, Pittsburg.

The Medico-Legal Status of the Röntgen Ray.

George C. Johnston, Pittsburg.

Abs. Increasing frequency of findings as evidence in courts of law. Liability of misinterpretation of such findings and consequent miscarriage of justice. Necessity of the evidence of the Roentgenologist to support and defend his plates. Unreliability of evidence based upon fluoroscopic examination alone. The dangerous custom of distributing prints to patients. In fracture the *x*-ray shows only the result obtained, never the difficulties attending the treatment. It is more difficult to interpret a radiogram than to make one. Increasing frequency of malpractice suits. Unusual opportunity enjoyed by the Roentgenologist of quashing such suits. Necessity for caution in examination of cases of old fracture. How to give expert testimony and preserve the respect of the court. Conclusions.

Results in the Treatment of Sarcoma.

William S. Newcomet, Philadelphia.

Abs. On account of the uncertainty of origin early operation at present seems to be the best means of relief. All tumors of benign nature should be removed. Spontaneous disappearance of disease, often in advanced cases, from unknown cause. Latent cases that have become aggravated by interference. Results from *x*-ray treatment: (1) Cases where the disease process has disappeared; (2) where the disease process has been controlled for a time; (3) cases that fail to react (usually where metastatic processes are rapid and scattered). Conclusions: That the *x*-ray is of most value in early stages of sarcoma, and should always be used after operation, over an extensive area, and that in very late cases it will often cause a retrograde metamorphosis with apparently complete disappearance of disease.

A Conservative Treatment and the More Malignant or Recurrent Types of Sarcoma, with Lantern Slide Demonstrations.

W. Wayne Babcock and George E. Pfahler, Philadelphia.

Abs. Of the very malignant tumors, sarcomata are the least amenable to radical surgical measures and most often undergo retrogression without operation. Traumatism often determines the primary localization, operative traumatism the site of recurrence. Advances in the magnitude of operative measures are not attended by a proportionate reduction in recidivity. Futility of expecting better results from more radical surgical treatment; necessity of invoking other measures. Toxemia and hemorrhage from the death of sarcoma cells rather than the life and growth of the tumor often kill the patient. Treatment advocated includes: (1) The prevention or control of necrosis and hemorrhage by subcapsular enucleation and topical applications. (2) The restraint or arrest of neoplastic growth by *x*-ray treatment, pyoktanin, methylene blue and other forms of treatment. (3) The development of an increased resistance. Coley's fluid of value in one tenth of the cases. Necessity of using a combined treatment. Remarkable results at times to be obtained in apparently hopeless cases. Stereopticon demonstration showing the results of treatment in recurrent and inoperable cases.

The Diagnosis and Pathology of Perforation in Typhoid Fever.

Warfield T. Longcope, Philadelphia.

Report of Cases of Perforation in Typhoid Fever Operated upon at the Pennsylvania Hospital.

Charles F. Mitchell, Philadelphia.

Abs. Symptoms of perforations. Time to operate. Incisions. Site of perforation. Methods of closing perforations. Toilet of peritoneum. Drainage. Postoperative treatment. Differential diagnosis. Report of cases.

Experience in the Surgery of Typhoid Perforation.

George L. Hayes, Pittsburg.

Thursday, September 26, 9 A. M.

Penetrating Wounds of the Thoracic and Abdominal Cavities.

Walter Lathrop, Hazleton.

Abs. Preliminary remarks concerning same. Article based on 22 cases of abdominal, and 19 of thoracic penetration. Success depends on prompt treatment, especially in abdominal penetration. Wounds of thorax should, as a rule, be drained and let alone. Report of one case of tetanus following gunshot wound of liver.

Sacless Hernia of the Inguinal Region.
JOHN B. CARNETT, Philadelphia.

Excision of the Rectum for Cicatricial Stricture by the Combined Method with Preservation of the Sphincter.
JOHN J. BUCHANAN, Pittsburg.

Suprapubic Drainage for Prostatic Obstruction.
ROBERT W. STEWART, Pittsburg.

Infectious Spondylitis.
DAVID SILVER, Pittsburg.

Tendon Transplantation.
JOHN H. JOPSON, Philadelphia.

Misapplied Mechanics in the Treatment of Flat Foot.
H. AUGUSTUS WILSON, Philadelphia.

ABS. In flat foot, the arch falls because of lack of capability of normal structures to hold it in place. There follows a relaxation of the ligaments, fascia, and muscles. Arch supporters do not strengthen but still further weaken the affected structures, and are therefore unmechanical, irrational, and tend to induce atrophy from disuse. Their temporary employment may occasionally be justified. Rational therapeutics of flat foot consist of re-establishment of normal flexibility, normal muscular control, with the object of obtaining normal function. Incorrigible cases may sometimes require operative measures such as arthrodesis, either alone or combined with tendon transplantation.

The Treatment of Acute Inflammations of the Pelvic Organs.
F. HURST MAIER, Philadelphia.

ABS. Danger of resorting to radical operative measures in the acute stages. Value of the Murphy treatment with the drainage per vaginam, in connection with this class of cases.

The Treatment of Pelvic Abscess.
FRANK C. HAMMOND, Philadelphia.

Ovarian Tumors Complicating Pregnancy and the Puerperium.
WILMER KRUSEN, Philadelphia.

The Treatment of Eclampsia.
JOHN C. APPLEGATE, Philadelphia.

ABS. Prophylaxis of greatest importance; treatment is based on the theory of toxemia with certain predisposing and contributing factors; stimulating diuretics not used until after readjustment of the kidney substance; venesection the exception, not the rule; time and manner of emptying the uterus; facts gathered from the author's treatment of thirty-eight cases in private and hospital practice.

The Treatment of Ectopic Pregnancy with Report of Cases.
CHARLES A. STILLWAGEN, Pittsburg.

ABS. Protests against the almost uniform teaching of obstetricians and gynecologists that immediate operation is indicated following the termination of an ectopic gestation. Patients rarely die if appropriate conservative treatment is employed, and an operation at this time, in the presence of shock, hemorrhage and probable infection, is extremely hazardous. Advises against early operation in all cases and believes that a celiotomy performed later is attended with no greater risk than with that of the ordinary pelvic operation. Report of cases includes one of recurrent ectopic pregnancy; one of lithopedion causing peritonitis and intestinal obstruction eleven years after the death of the fetus; and one of simultaneous intrauterine and extrauterine pregnancy. The last case previously reported.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

Chairman LEWIS H. TAYLOR, 83 South Franklin St., Wilkes-Barre.

Secretary ROBERT MILLIGAN, Westinghouse Building, Pittsburg.

Executive Committee—SAMUEL D. RISLEY, Philadelphia; LEWIS H. TAYLOR, Wilkes Barre; and ROBERT MILLIGAN, Pittsburg.

ROOM 3, SECOND FLOOR FRONT.

TUESDAY, SEPTEMBER 24, 2 P. M.

SYMPOSIUM: HEADACHE.

The Relation of Headache to Affections of the Eye.
SAMUEL D. RISLEY, Philadelphia.

ABS. (1) That abnormalities of the ocular apparatus are, in a large group of patients, the sole and sufficient cause of headache. (2) That these anomalous conditions may be the unsuspected cause. (3) That the sudden or recent development after severe acute illness is not sufficient evidence against ocular participation in causing the symptoms. (4) That neurotic individuals are especially prone to suffer from headache due to eye-strain as a part of their symptom-complex. (5) That, therefore, ocular participation as an etiologic factor in headache can be justly excluded only in the absence of ocular disease, or after the most careful correction of anomalous condition.

Discussion opened by CHARLES K. MILLS and CHARLES W. BURR, Philadelphia.

Headache Due to the Disease of the Accessory Sinuses.
B. ALEXANDER RANDALL, Philadelphia.

ABS. The former association of ophthalmic and aural surgery had its justification in the frequency of disease of the nose and its accessory cavities which gave rise to affections of both eye and ear. Laryngology has only for a decade made fair claim to this field, frontal, ethmoidal and lacrymal conditions having been left almost wholly to the oculist. The latter was sometimes overzealous in ascribing headache to eye-strain from refraction defect or muscular anomaly; but Harrison Allen, Ziem of Danzig, Gruening, Ewing and others have given us valuable reminders of the need of rhinological study. Only the serious lesions, empyema, caries, osteoma and other new growths formerly concerned us; now we must consider minor inflammations and even vasomotor disturbances of this tract. Neuroretinitis, ocular palsies and orbital phlegmons must not be required to rouse us to appreciate the importance of nasal lesions, but our primary examination should include search for such; and any failure of our ocular measures promptly to relieve headaches should demand exhaustive study of the nose and its accessory cavities.

Discussion opened by BARTON H. POTTS, Philadelphia.

Headache from a Neurologic Standpoint.
EDWARD E. MAYER, Allegheny.

ABS. Difficulties in making distinctions between headaches and paresthesiae. Value of locality and extension of head pains in diagnosis. The factors of toxemia, stress and exhaustion evoking headaches. Effort of adjustment of function and what it signifies. A biologic explanation necessary in many types of headache rather than a pathologic one. What value has headache as a symptom of brain involvement in middle-ear disease? Does it mean anything in suspected meningitis? Symptom-complexes simulating organic disease in which headache is prominent as a symptom. Actual brain diseases and the value of headache as a symptom in them.

Discussion opened by THEODORE DILLER, Pittsburg.

Headache Due to General Diseases.
JAMES C. WILSON, Philadelphia.

ABS. Headache not a disease but a symptom. The significance varies according to the nature of the primary affection. It may be circulatory (anemic or congestive), mechanical, toxic, infectious; essential or accidental; transient or persistent. Considerations of general and special forms of headache that occur in constitutional affections; their clinical importance; their differential diagnosis, prognosis and treatment.

WEDNESDAY, SEPTEMBER 25, 9 A. M.
(See Program for General Meeting.)

WEDNESDAY, SEPTEMBER 25, 2 P. M.

EAR PAPERS.

Do We Hear Ourselves as Others Hear Us?
G. HUDSON-MAKUEN, Philadelphia.

ABS. We do not hear ourselves as others hear us any more than, according to the Scottish poet, we "See ourselves as others see us." The personal equation in the faculty of hearing is so marked that probably no two people hear exactly alike and this is especially true of the hearing for speech and voice. The character of speech that is pleasing to one individual is often displeasing to another. Speech is probably always entirely satisfactory to the person speaking no matter how defective it actually is. This may explain why so many of us talk so much. In the development of speech the ear appears to learn to accept whatever form of speech may be at the time most easy of production, and this is true even though it be of markedly defective character. Of course, education accompanied by frequent reminders or suggestions that one's speech may be disagreeable and imperfect will serve to change one's estimate of his own speech and render him dissatisfied with it, but the one not having received such education will remain blissfully unconscious of even pronounced defects. This is a fact of great importance in the treatment of speech defects, for it emphasizes the value of the training and cultivation of the so-called subjective hearing.

Discussion opened by G. ARTHUR DILLINGER, Pittsburg.

Intracranial Involvement in Acute Middle-Ear Suppuration.
BARTON H. POTTS, Philadelphia.

ABS. Involvement of labyrinth. Extradural abscess. Jugular bulb thrombosis. Sinus thrombosis. Meningitis. Ensephalitis. Erosion of brain. Brain abscess.

Discussion opened by B. ALEXANDER RANDALL, Philadelphia.

Acute Inflammation of the Middle Ear.
FREMONT W. FRANKHAUSER, Reading.

ABS. Early in the disease in small children, it is sometimes difficult to diagnose acute inflammatory conditions in the middle ear, as the pain can not be located except by signs only, as reaching or rubbing the ear, but when it continues and suppuration takes place with rupture of the membrane and a discharge of pus there can be no doubt. If caused by enlarged tonsil or adenoids those should be removed as soon as the acute symptoms subside, so as to prevent future attacks of the same, and to avoid further extension of the disease. Drainage to evacuate all discharge by washing out the external canal with antiseptic solutions until thoroughly clean, several times a day. Internally such medicines as will assist in allaying pain and in relief of suffering, and a general tonic to improve the general health of the patient.

Discussion opened by HOWARD F. PYFER, Norristown.

The Importance of Early Evacuation of Pus in Acute Otitis Media.
LEWIS K. SOMERS, Philadelphia.

Discussion opened by WILLIAM A. HITSCHLER, Philadelphia.

NOSE AND THROAT PAPERS.

Cough and Its Treatment.
D. BRADEN KYLE, Philadelphia.

ABS. (1) The local causes of cough due to local lesion. (2) Local irritation that is due to systemic condition. (3) The so-called reflex coughs. (4) Cough as a symptom.

Discussion opened by CHEVALIER JACKSON, J. A. LICHTY, LAWRENCE LITCHFIELD, Pittsburg.

Examination of the Teeth as an Aid in the Diagnosis of Adenoids.
WILLIAM G. B. HARLAND, Philadelphia.

Discussion opened by MATTHEW H. CRYER, Philadelphia.

Tubercular Laryngitis.
G. R. S. CORSON, Pottsville.

ABS. Denied by many as a primary disease, does exist, though rarely. Almost always secondary and associated with pulmonary tuberculosis. To be differentiated from syphilis, carcinoma, and lupus. Exclude first by a course of iodids, second by the distinct and usually easily demonstrable tumor, and third by the absence of, or slowness with which the ulcer develops. Look for pulmonary involvment in every suspected case. Differentiate the character of the ulcer in each disease. Absolute rest of voice of prime importance in treatment. Treatment of the general system not to be overlooked.

Discussion opened by JUSTUS SINEXON, Philadelphia.

Some New Mechanical Devices in the Treatment of Laryngeal Diphtheria.
EDWIN ROSENTHAL, Philadelphia.

Discussion opened by

Septal Perforations. Their Closure by Plastic Operation.
CHEVALIER JACKSON, Pittsburg.

ABS. Size of perforation adapted to closure. Disadvantage of enlarging a small opening to stop "whistling." Ease of closure of small openings. Technic of a new operation. Report of cases.

Discussion opened by D. BRADEN KYLE, Philadelphia.

Syphilitic Parotitis.
BEN CLARK GILE, Philadelphia.

ABS. Syphilitic enlargement of the salivary glands may occur either during the secondary or tertiary stage. The diagnosis is made on a history of chancre followed by the secondary symptoms of syphilis or simultaneous presence of either typical tertiary lesions and the exclusion of other known causes.

Discussion opened by WALTER S. HARGETT, Philadelphia.

Rhinedema with Polyp Formation.
WILLIAM A. HITSCHLER, Philadelphia.

ABS. A nasal edema which leads to the formation of polyp. Disappearance of both edema and polyps either spontaneously or under general treatment; *i. e.*, without operative interference. Report of five cases. Nasal obstruction and asthma prominent symptoms, probably due to a lowering of the blood pressure and may be considered an advanced stage of vasomotor "rhinitis."

Discussion opened by HENRY J. OFF, Philadelphia.

The Total Extirpation of Diseased Tonsils; Importance and Method.
GEORGE MORLEY MARSHALL, Philadelphia.

Discussion opened by JAMES E. TALLEY, Philadelphia.

Turbinotomy and Its Results.
G. ARTHUR DILLINGER, Pittsburg.

Discussion opened by G. HUDSON-MAKUEN, Philadelphia.

THURSDAY, SEPTEMBER 26, 9 A. M.

EYE PAPERS.

Cosmetic Eye Surgery.
WILLIAM C. POSEY, Philadelphia.

ABS. All operations performed upon the eye may be said to be in a sense cosmetic, for whether the operation is done with the purpose of increasing vision, or whether it is directed to restoring the normal contour and position of the lids, the appearance of the patient is affected in both instances. Plastic surgery about the lids: the restoration of the eye-lids; report of several cases. The correction of strabismus by tenotomy and by advancement of the ocular muscles, with photographs of cases illustrating results. Removal of maculae by tattooing. An operation for the correction of colohoma of the lid.

Discussion opened by CLARENCE A. VEASEY, Philadelphia.

Congenital Dacryocystitis.
WILLIAM ZENTMAYER, Philadelphia.

Discussion opened by GEORGE MORLEY MARSHALL, Philadelphia.

Vernal Conjunctivitis.
L. WEBSTER FOX, Philadelphia.

ABS. The nature of the disease. Microscopical findings. Treatment that has been carried out for years without results. Author's method of operating. Conclusions.

Discussion opened by EDWARD B. HECKEL, Pittsburg.

Injuries of the Eye by Foreign Bodies.
WILLIAM M. SWEET, Philadelphia.

Discussion opened by CLARENCE P. FRANKLIN, Philadelphia.

Primary Sarcoma of the Iris with Report of a Case. EDWARD B. HECKEL, Pittsburg.

ABS. Diagnosis, site of growth, frequency, course and symptoms, prognosis, treatment, histologic examination.

Discussion opened by SAMUEL D. RISLEY, Philadelphia.

Detachment of Retina.
CHARLES E. G. SHANNON, Philadelphia.

Discussion opened by HOWARD F. HANSELL, Philadelphia.

Abscess of the Orbit.
WENDELL REBER, Philadelphia.

ABS. Infrequency of the condition. Usually secondary to extension of disease from one of the accessory sinuses. Sinus symptoms may or may not be frank in such cases. Recital of two case histories. One an acute case consecutive to an acute frontal sinusitis. The other following upon chronic sinus disease set up by a foreign body in nasal fossa for three months. Operation in both cases. Cure.

Discussion opened by W. C. MEANOR, Pittsburg.

The Treatment of Ptosis.
W. C. MEANOR, Pittsburg.

Discussion opened by J. FLOYD MURDOCH, Pittsburg.

The Eye and the Pelvis.
CLARENCE P. FRANKLIN, Philadelphia.

Discussion from the gynecological point of view by WILMER KRUSEN, Philadelphia.

The Treatment of Recent Injuries to the Eye by Penetrating Pieces of Steel.
JOHN B. CORSER, Scranton.

ABS. Only cases considered in which the injury has occurred less than twenty-four hours previously. Advantages of early over delay treatment. Routine method used in localization and removal of magnetic foreign bodies. Results. Frequency of these cases in mining, manufacturing and railroad centers. Plea for more general use of localization apparatus and magnet by oculists living in the smaller cities and towns.

The Treatment of Internal Inflammation by Diaphoresis.
HOWARD F. HANSELL, Philadelphia.

ABS. The great value of treatment by a succession of active sweats in many inflammations of the eye, particularly those affecting the uveal coat, and notwithstanding the oft-repeated attention given to the subject by writers on ophthalmology, the too frequent neglect by practitioners are the reasons for this paper. Its application is extensive and includes both syphilitic and nonsyphilitic diseases. In the former a great adjunct is the contemporaneous use of mercury, which may be administered in greater amount and for a greater length of time than when given independently of the sweats. Diaphoresis may be secured without the aid of pilocarpin or jaborandi and is equally efficacious as when the sweating is induced by that drug given by the mouth or hypodermically and thus the treatment is not subject to the adverse criticism of physicians who consider jaborandi a dangerous drug. The method described in detail, is by means of hot water bottles, electric lamp, blankets and hot and cold drinks. Reference is made to the literature of the subject and the writer reports briefly a few of his recent cases.

Discussion opened by WENDELL REBER, Philadelphia.

The Treatment of Epicanthus with Exhibition of a Case.
DANIEL B. D. BEAVER, Reading.

This is a preliminary program and subject to change.

THEODORE B. APPEL,
Chairman of Committee on Scientific Work.

John W. Wainwright states that moderate exercise is of great value for hygienic as well as for therapeutic reasons in the treatment of debility, anemia, hysteria, neurasthenia, muscular atrophy and obesity. Gentle exercise is of great importance in the case of ill-nourished children as well as for convalescents recovering from acute or chronic illness. The writer believes that every physician ought to understand something of the methods of "mechanico-therapeutics," and should avoid vague expressions such as "out-of-door life," "muscular exercise," and so on, when consulted as to the propriety of exercise in an indivdual case. Every man is a law unto himself. The writer concludes that for practical purposes the moderate use of dumb-bells, Indian clubs, developing machines, bicycling, horseback riding, walking, and similar methods of exercise, will accomplish much in promoting the physiological functions of our organs, and thus assist in great part to ward off the ravages of disease. —*Medical Record*, May 5, 1906.

The highest aim is not to cure, but to prevent disease.—Osler.

The Pennsylvania Medical Journal.

The Official Organ of the Medical Society of the State of Pennsylvania.

Vol. X. No. 12. | Athens, September, 1907. | Subscription : $2.00 Per Year.

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Next Annual Session will be held in Reading, September 23-26, 1907.

American Medical Association : President, Joseph D. Bryant, New York; President elect, Herbert L. Burrell, Boston; Secretary-Editor, George H. Simmons, 103 Dearborn Ave., Chicago.
Next Annual Session, Chicago, 1908.

Address.

VESTIGES AND VISIONS.

"The goal of yesterday will be the starting point of to-morrow."—Carlyle.

By Charles McIntire, A. M., M. D.,
Easton.

(The address of the president of the Lehigh Valley Medical Association, delivered at the twenty-seventh annual meeting held at Glen Summit, July 11, 1907.)

Charles Dickens wrote of Samuel Weller, "Mr. Weller's knowledge of London was extensive and peculiar." The same adjectives can be applied with propriety to the fund of information regarding the early history of our country possessed by Alice Morse Earle. In one of her entertaining books she writes:—

> When America was first settled, forks were almost unknown to English people, being used for eating in luxurious Italy alone, where travelers having seen and found them useful and cleanly, afterward introduced them in England. * * * The first fork brought to America was for Governor John Winthrop, in Boston, in 1633, and it was in a leather case with a knife and a bodkin. If the Governor ate with a fork at the table, he was doubtless the only person in the Colony who did so.

I opine that the most ardent antiquarian of us all would not wish to resume this feature of the good old time, nor, could we do so, return to the olden days of wigs, gold-headed walking sticks and unguent pots. And yet, it is of interest to get a view of the former things, of use to see the objects of value which have survived—forming stones of beauty and utility in our present edifice, and a strong foundation on which to erect the structure of the future.

Consequently, I ask you to bear with me for a little while in an effort to express to you my appreciation of the honor you have conferred upon me. For to me, of all the members of our association, your placing me in office at this time is a peculiar honor. Your nominating committee could have said, and properly, "He has had honor enough in the years we have borne with him as secretary, let him have the experience of private life for a while." And to this the association could have said, "Amen."

Not so, however; you have crowned the pleasant association of the years agone with this, the highest gift in your possession. May the life strengthen any words that can but too feebly express the concept. Members of the association: I thank you!

In the record of the days before the Noachian deluge as described in the earlier chapters of Genesis, the author speaks of the "sons of God" and the "daughters of men." We will leave to biblical exegetes the exposition of the true meaning of the phrase. This much is clear upon the surface; even in those early days, the sparsely settled world was divided into two classes. It is not surprising then, that from the beginnings of records we find the sons of God and the fathers of the daughters of men among the followers of the healing art. Quackery is not the creation of but yesterday, while the greatness of the calling has been illustrated centuries before the present era.

On a festive occasion like the present, we want the bright, the cheerful, the pure and uplifting. We will not burrow in the earth except to find jewels. Let us attune our ears to harmony and adjust our eyes to the beautiful. Only, as in olden times the skeleton was introduced at the feast as a reminder of mortality, let us keep in mind the fact that there has been and still is a submerged portion, which we must recognize and ever try to raise.

"There is no new thing under the sun," said the sage of the Old Testament. Give heed to the following:—

> Medicine is of all the arts most noble, but owing to the ignorance of those who practice it, and of those who, inconsiderately, form a judgment of them, it is at present far behind all other arts.

Except that the wording is a little archaic, would you not accept this as a lament copied from an article in some recent journal? And yet these are the words of Father Hippocrates. Let me quote once more:—

> Whoever is to acquire a competent knowledge of medicine ought to be possessor of the following advantages: a natural disposition, instruction, a favorable position for the study, early tuition, love of labor, leisure.

With the observation of the ancient sage, I wish to couple a sentence from a modern student:—

> The highest kind of knowledge is the fruit of intuition and imagination and feeling and mind, combined in one fervid glow, intellect gleaming with imagination, though suffused with emotion. In other words, it takes all the faculties of a man to grasp truth at its highest.*

As the best of all of a man, and all the best that is in him, enters into the professional life, by so much does he approach unto the stature of a true physician.

Hippocrates in the same essay from which I have already quoted, says further, "Inexperience is a bad treasure." In the Hunterian Museum in England there is a manuscript written about 1550 by one, Henry Fowler, an Oxford graduate, wherein the same truth is expressed in a quotation more forcible than polite: "*Nullam medicum esse peritum nisi trigenta homines ad Orcum dimissent.*" Or, in our vernacular: No physician is skilled until he has sent thirty men to —— no matter where; the send off is the doctor's; the destination is beyond his control.

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*Prof. Hugh Black.—Culture and Restraint, p. 113.

There is another characteristic, an ancient vestige, for which we should be grateful and of which we should be proud. I can not present it to you better than to quote from an address of President Faunce of Brown University:—

> In two respects the medical profession deserves the grateful recognition and regard of all other callings in modern life. It has always insisted that the practice of medicine is a profession and not a trade. Trade is occupation for a livelihood; profession is occupation for service of the world. Trade is occupation for the joy of the result; profession is occupation for the joy of the process. Trade is occupation where anybody may enter; profession is occupation where only those who are prepared may enter. Trade is occupation taken up temporarily until something better offers; profession is occupation with which one is identified for life. Trade makes one the rival of every other trader; profession makes one the coöperator with all his colleagues. Trade knows only the ethics of success; profession is bound by the lasting ties of sacred honor.

While alas! we recognize the tradesman in many licensed to practice medicine, let us rejoice in the fact that a student of affairs was able to ascribe to us the preservation of the professional idea through the ages.

Indeed, when all is said, the physician, who is truly a physician, but examples Spencer's rule of right living, "Right ruling of conduct in all directions under all circumstances." We have seen that it was true of Hippocrates. We find it so in these words of Maimonides, one of the physicians of the Middle Ages:—

> May the love of my art actuate me at all times; may neither avarice nor miserliness, nor the thirst of glory or a great reputation engage my mind; for, enemies of truth and philanthropy, they could easily deceive me and make me forgetful of my lofty aim of doing good to Thy children. Endow me with strength of heart and mind, so that both may be always ready to serve the rich and the poor, the good and the wicked, friend and enemy, and that I may never see in the patient anything else but a fellow creature in pain.

While the acceptance of Ian Maclaren's creation of Dr. Weelum Maclure as a portrait from life, is evidence of the existence of the principle to-day. But, as Montague says of education, "I would have the disposition of his limbs formed at the same time as his mind; for it is not a soul, it is not a body we are training up, but a man, and we ought not to be divided in him."

In like manner, indissolubly combined with all the glorious inheritance is the question of reward. Among all who have ever lived upon this round ball which we call the earth, the two *par excellence*, the most altruistic of all—the Great Physician himself and his humble follower, erst Saul of Tarsus—have said, "The laborer is worthy of his reward." What, then, are the rewards of the physician; the one worthy of his calling? Sir James Paget enumerates them thus:—

> Competency of living; the society of educated men; blessings from the poor; recompenses with gratitude from the rich; boundless fields for intellectual exercise; access to the richest stores of knowledge for the glory of the Creator and the relief of man's estate; daily inducements to the highest of Christian virtues.

"A man's life consisteth not in the things he possesseth," but in that which contributes to the enjoyment of his true self. What greater reward can any one have than is here outlined,—a surety to every true physician?

But we note that while these things have continued from of old, there has been true progress. The goal of yesterday has proved but a way station and the morrow brings the command: Go forward. It is not my purpose to more than mention the fact of the great advances in medicine as a science. These are patent to you and along with them I wish to recognize equally great advances in medicine as a practice.

Tycho Brahe, the astronomer, in the Observatory at Uranienborg, discovered the elliptical orbits of the planets by using the earlier method of reasoning. "God is perfect in all His works," said he, "and the most perfect figure is a circle. Consequently the planets move in circular orbits." But he could not fit his observations to his syllogism. He tried again, "God is perfect in all His works; the next most perfect curve is an ellipse; ergo the path of the planets form an ellipse." This time, the theory and practice agreed. Oftentimes theories were advanced and battles waged over them without endeavoring to fit the facts. The great discussion in France which was referred to our own Benjamin Franklin is an example. "Why is it," he was asked, "if you take a vessel of water and put a fish in it, the weight will not be increased?" Many had been the reasons advanced before the question was referred to him. Franklin suggested the desirability of making the experiment, when it was found that the weight was increased by the weight of the fish.

This method of evolving a theory by pure reasoning and then seeking to conform the facts to the theory, causes narrowness of view, divisions and disputes. Truth is frequently present, but it is not viewed aright and since, as De Quincy asserts, "all errors arise from some narrow, partial or angular view of the truth," errors were constantly rising as a consequence. Sir James Paget says, "It is a law of our nature that on all doubtful matters, the vast majority of men refuse to wait for knowledge, and arrange themselves in parties each of which maintains that itself is the sole possessor of truth." As a consequence there are vestiges of strife, hatred and combat all along the highway over which the caravan has passed, bringing the sacred mysteries of the healing art through the ages.

"Doctors and lawyers and scientists look with more or less distrust on all new theories, because the new involves the removal of a part of the old, and the upsetting of ideas and practices and customs," says the Rev. J. P. Peters, D. D., in his "Old Testament and New Scholarship."

But the new scholarship in medicine is changing all this. Working hypotheses may be formed, for there can be no advance without the imagination, but they are held in check and are modified to suit the facts as they are demonstrated. Forks are no longer the sole possession of a colonial governor, but are in the hands of the humblest in the land. The physician uses his fork of stethoscope, or microscope, or what not, and the laboratory is leveling the walls of separation.

But, and we turn from the vestiges of the past to visions of the future, the knowledge, once a mystery to be communicated only to the initiated, is coming into the possession of all, and the doctor again is becoming a teacher. He does not hide his knowledge of Jesuit's bark that he may gain a reputation in treating the ague, but boldly teaches his patients to avoid the bite of the mosquito. He is entering the schoolroom and giving information of the laws of life and the rules for right living. It will not be very long before the laity will pay larger fees to their physicians to be kept well than to be cured of an illness.

This increasing knowledge brings increasing responsibility. The proneness of even intelligent persons to be influenced by the manipulations and mental vagaries of the imperfectly educated, or of the cracked-brain enthusiast; the lack of appreciation of the average man for the employment of means to secure pure water, good drainage and pure air, because the outlay of the money does not seem to bring a direct return; the willingness of so many to be gulled by sophisticated food, pretended remedies, etc., all conspire to make it necessary for the physician to assume a commanding influence in legislative bodies, and the profession of our vision will be united on the strongest basis of unity in essentials, liberty in nonessentials, and ever and always charity.

Should a man for sentiment's sake, or even to impress a psychic influence on the people, wish to call himself a homeopath or what not, why not receive him into our societies along with his idiosyncracies, if he be a clean man and a properly educated physician? Our vision sees the doing away of these childish things with the progress of knowledge and the broadening of mind from true educational processes.

And yet, one must confess that just now this is hardly tangible enough even to be visionary. The history of the effort to secure sound legislation at Harrisburg last winter makes the endeavor to secure true professional organization to appear almost like entering the abode of the lost through Dante's portal and leave hope behind. But, "It behooves the wise to live in hope," and it becomes us calmly and deliberately to determine the condition and seek for the cause of the wrong.

While conscious of the expanse of glass in our own edifice, let us try to see why the homeopathic physician permits himself to be on the side of mischievous legislation by opposing the only sort of law that will prevent it. There is, of course, the recollection of past treatment, of that ostracism that even now prevails; then there is a matter of sentiment which appeals more strongly to our nature and produces more obstinancy than all other causes combined. Giving full weight to these conditions, there is another motive which, while it may not consciously be influencing all of them, is of high potency, indeed almost omnipotent. This is a purely commercial, dollars-and-cents influence. I am perfectly willing to grant that there are some homeopathic schools far superior to some schools teaching nonsectarian medicine; that there are some homeopathic medical journals far superior to some other journals. Before we begin to criticize, we must cleanse our own products. But, and this is the point, the best of their schools and the best of their journals are not included among the best of the entire list, either of schools or of journals. If these institutions had not the name homeopathic to conjure with, they would suffer in numbers of students or subscribers.

It is true of the practicer. Many are employed because of actual superiority; but of many others, the choice is not made because John Doe, homeopath, is compared with Richard Roe, the other path, as to their skill. The choice is made because the family wishes one path or the other, and thus the name becomes a commercial asset. Do not misunderstand me; it is claimed by the party of the other part that he makes use of and teaches something of which the old school takes no cognizance; and that which he thus employs and teaches is of distinct value, and which he claims to be an entity and not a mere name. I wish, in this discussion, to give him the full right of holding that opinion and of making use of it. I merely assert that this thing which he claims, is of greater commercial value to him if he makes it the mark of distinction and because of it keeps himself apart from the great company of physicians; and especially valuable if he can make it appear that he is so kept apart by the action of the party of the first part, whom he pictures as only and always playing the rôle of the ravening lion perpetually seeking innocent victims to destroy them. In other words, in my opinion, much of the lack of harmony between the several groups of legal practicers of the present time, is caused by the party of the other part consciously or unconsciously striving to maintain the division for selfish, personal ends. Let us recognize this, but not display our knowledge offensively.

An open campaign of education should be entered upon at once. This should include, in the first place, free conference with the party of the other part, whereby an understanding can be reached for a single board of medical examiners so constituted that the sectarians will be protected in their own views. Better by far a single board composed largely of homeopaths than the principle of a board for each and every device which the fertile mind of man formulates into a system of medicine. In this consultation we must not advance the rights of the majority too strenuously.

In the next place the people should be instructed upon the twofold nature of a medical practice act: primarily, to insure a certain minimum amount of knowledge upon the part of physicians to safeguard the welfare of the citizen; incidentally, to protect the physicians so approved in the exercise of their licensed rights. It should be made clear that this standard is not helpful to the doctor except as he has professional pride and desires to see only safe men and women licensed. We must show that the standard ought to be demanded by those apt to be patients, and try to induce them to take enough pride in their physicians as to demand that they shall possess the educational qualifications equal to the highest required of any state in the Union.

In doing this, we ought not to forget the other function of a medical practice act. If these qualifications are exacted entailing the expenditure of time and money upon those who obtain a license, the state ought to protect the licensed physician by insisting that all shall be licensed who, in any way and to any degree, attempt to alleviate disease. The state imposes the test because it believes such a test to be necessary. That some may wish to treat disease, believing that this amount of knowledge is not necessary for their method of practice and will not be used, is not to the point. It involves no more hardship to them to pass the required examination believed by the state to be necessary to protect its citizens. When one man or one class says that they do not need some of the subjects, they differ from the state, it is true, but that assertion ought not to alter the law for a class only. In addition to this, there should be official oversight to prevent unlicensed practicing. These subjects should be brought to the attention of the people that they may be made to appear in the proper light, and the candidates for nomination to the next legislature should be interviewed and the influence of the profession used to secure the nomination and election of those who will support a fair medical practice act.

To insure this pledge being of real value and beyond subterfuge, a bill should be prepared that is fair to all parties legitimately interested and which has received the endorsement of the medical profession generally.

What, then, is a fair medical practice act? It is not such act as one would like to frame where the conditions would be to his making. It must recognize the legality of things not ethical, using that word in its medical technical sense; it must appear to be fair to the judgment of the citizen of average intelligence. With these restrictions in mind, I will venture to outline the provisions of such an act.

The first section should define the practice of medicine. It is a difficult task to frame a comprehensive definition. I suggest that:—

> Any one who attempts to determine the nature of, or to relieve, remove, alleviate, mitigate or cure any injury, morbid condition or process, or distemper, pertaining to any man,

woman or child, receiving or expecting to receive therefor, any pecuniary or other tangible compensation, fee, honorarium, or other award by any manner or method whatsoever, shall be practicing medicine within the provisions of this act.

It might have been more modest on my part to have offered a definition framed by another. While clinging to my own creation, permit me to quote the definition given in the new Medical Practice Act of New York:—

> A person practices medicine within the meaning of this act, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition.

Section 2 should provide that no one, not registered in the county, can open an office to practice; and that he can not practice in any event unless registered in some county in the state, or is a legal practicer residing in a county of an adjoining state immediately contiguous unless called in consultation by a registered practicer, or is a member of the medical department of the army, navy or marine hospital service in the pursuit of his official duties; or is an intern in a public hospital work under the direction of a registered practicer.

Section 3 should provide that any one possessing a license not more than a year old, or the certified copy of registration in another county, may be registered.

Section 4. Licenses should be issued either to those who have passed the required examination before the state board of medical examiners, or can furnish evidence that he has been a reputable, legal, non-itinerating practicer in another state, within a year of his seeking license in Pennsylvania, having qualifications of equal severity. No one shall be eligible to take the examination who has not had a preliminary education fully equivalent to a completed high school course, including Latin, and who has not been graduated from a registered medical school whose curriculum covers four years.

This is essentially the standard requirement of to-day, except it is not stated that the student must spend his four years in a medical school. If he can enter advanced standing, why compel him to go over the work merely to kill time?

Section 5 should define the board of examiners. With a single board, no supervising medical council is necessary. Here lies a difficulty and it increases with the passing years,—osteopathy, for example, has gained such a foothold that it must be recognized in some way. Had the old law been a comprehensive one, it could have taken care of it without direct recognition. I suggest that the board consist of nine; four to be appointed from the nominations made by the Medical Society of Pennsylvania, two by the Homeopathic State Society, and one by the Eclectic State Society. This is not a *pro rata* division, but let us be liberal to the minority. The remaining two can be appointed by the Governor as he pleases and may or may not be physicians; but both of them can not be members of the same state society. On all matters regarding the issuing of licenses, a two thirds' vote of the entire board is necessary; this is to prevent the adherents of any state medical society dominating the board.

In section 6, I would prescribe the division of the subjects into two classes, the junior and the senior: the junior to include anatomy, physiology, chemistry, pathology, hygiene—including sanitary science, symptomatology and physical diagnosis; the senior subjects to include materia medica, therapeutics, practice of medicine, surgery and obstetrics. The subjects should be divided among the members of the board for the convenience of reading papers. Should the paper of the graduate of one school of medicine be read by an examiner of another school and be thought to be below the passing grade, the paper shall be reviewed by all the members of the school of the applicant. Should these agree with the decision of the examiner, the result shall be confirmed. Should the reviewers, however, consider the marking too low, the paper shall be reviewed by the board and a vote recorded. Unless there be a two thirds' vote to the contrary, the decision of the reviewers shall stand, but a minute of the fact shall be kept in the record of the examination.

This sounds cumbersome. While I regret to believe that the markings of the separate boards are very unequal, to the disadvantage of the majority of the applicants, this does not mean a deliberate lowering of the standard on the part of some. It is well known that certain professors in any faculty give higher marks than the others. I am of the opinion that the scheme as outlined would provide a uniform standard and remove misunderstandings. And, in a little while, the board would be a unit in promoting the welfare of the people by insisting upon a fair standard of qualifications for those who apply to practice medicine.

Section 7 would provide the taking of an examination in the junior studies alone, when it may be taken after a two years' study either in a registered medical school, or in some other institution having the facilities for teaching the subjects required and so registered by the board of examiners. A permit for special registration may be issued upon application to those who have passed this examination. This form of registration would permit the person registered to offer his services to treat disease in any way which does not include the use of drugs, chemicals, electric or special light apparatus, or the employment of surgical instruments for operative purposes. The person so practicing must keep displayed where it can be easily seen by those who enter his office, the words: "Registered by Permit for Limited Practice." He shall not be permitted to sign death certificates.

This provision gives osteopaths and *id genus omne* a recognition which is fair to them, and at the same time protects the public. This is all we can ask for in the present state of public opinion. The seer can hope for the time to come when the doctor shall have fulfilled his function as a teacher to such a degree that the people will arise in their might and say, "We will have none but the fully educated."

Section 8 would provide for the impersonality of the examined by requiring him to use a number on his paper, and the paper shall be read before the identity of the author is known. He shall also use a predetermined letter to indicate his school of practice.

Then there should be sections providing for the organization of the board; the payment of fees; the pay of the examiners; reexaminations; penalties for illegal practice; the power to revoke a license for certain causes; a provision to accept licenses from other states, etc.; and, in addition, the creation of a department of medical registration, with the secretary of the board of examiners as head of the department. The functions of this department would be patterned after those of the Kentucky State Board of Health, so graphically described by Dr. McCormack.

A bill patterned on these broad lines should be prepared carefully and so phrased as to receive the support of the entire profession. It should be brought to the attention of all thinking men and especially the candidates for the legislature. Then, when it is presented, we will be spared the almost hysteric appeals that we have had during the past winter. It will be something that the people will demand, and if they do not get it, they will know the reason why. But, you say, this is not practical politics; that, like the prophet of old called by the King of Moab, I have been dreaming with my eyes open. Be it so. The scheme may not come before the next legislature, but it will come and the vestiges, when it comes, will show sorrier scars than now. The power rests with you to start the effort to make the vision real.

In a New Hampshire graveyard, the following is said to be inscribed on a tomb-stone:—

Ruth Sprague, daughter of Gibson and Elizabeth Sprague, died January 11, 1816, aged 9 years, 11 months, — days. She was stolen from the grave by Roderick Clow and dissected at Dr. P. M. Armstrong's office in Hoosick Falls from which place her mutilated remains were obtained and deposited here.

Her body dissected by fiendish men,
  Her bones anatomized,
Her soul in trust has risen to God,
  A place where few physicians rise.

Our vision of the future disproves this poor opinion of our profession. Entering, as he will, more and more into the industrial world as a health adviser; into the social world as an instructor concerning these wonderful bodies of ours; into the family as a mentor in health as well as a practicer in disease; with ever increasing acquisition of true knowledge which tends to humility, he will manifest in his life and work all that is noble and pure and true. It is your duty, and mine, in our individual capacity to assist in developing the true, the pure and the good. May the Lehigh Valley Medical Association continue during the years to develop the best that is in us, to grow ever more powerful that it may care for the weak, right wrongs, and champion the true.

Never apply an elastic ligature about the arm without first interposing a towel. This may obviate subsequent paralysis.—*Am. Jour. of Surgery.*

PREMATURE DETACHMENT OF THE PLACENTA WITH REPORT OF A CASE.

BY OLIVER J. KREGAR, M. D.,
Monessen.

(Read before the Westmoreland County Medical Society at Monessen, June 18, 1907.)

This condition has been given very little attention by obstetricians. Women have lost their lives suddenly because of permature detachment of the placenta and the cause of death was not determined. The tendency has been to consider nearly all antepartum hemorrhage as due to placenta prævia. This has been due largely to the erroneously held notion that premature detachment is a very rare complication.

Premature detachment of the placenta has been defined as hemorrhage resulting from a loosening of a part or the whole of the placenta attached above that part of the uterus which must dilate to permit the birth of the fetus, and which must occur before the completion of the second stage of labor. In many respects it has an anology to the initial stages of abortion.

Before 1664 all information of hemorrhage in pregnancy and labor was largely that handed down by Hippocrates. He believed that the placenta was invariably attached to the fundus uteri, and that hemorrhage was due to a separation of it. When the afterbirth was found at the os, it was thought that placental prolapse had occurred. Soon after, however, careful observers declared that the placenta was at times attached to the os internum. About 1822 Rigby published his thesis, "An Essay on the Uterine Hemorrhage Which Precedes the Delivery of a Full-grown Fetus." Hemorrhages were classified as accidental and unavoidable, the former that resulting from premature detachment and the latter that from placenta prævia. He did not, however, differentiate between true detachment and placenta prævia.

Later the subject was brought more prominently and correctly before the profession by the discovery of the information of the retraction ring of the uterus and its importance in this condition. Hemorrhage from placenta attached above this line is from premature detachment. Hemorrhage from placenta attached below this line is from placenta prævia. This retraction ring is no fixed point but varies in different subjects and its position depends somewhat upon the size and presentation of the fetus. Placenta may slightly encroach upon the neighborhood of the retraction ring, causing, in dilatation, slight separations to take place which would occur late in labor.

The hemorrhage from detachment may be concealed or open. This depends largely upon the site of the hemorrhage, whether it is held within the margin of the placenta, and upon the obstruction the fetus offers to its escape.

Regarding the frequency of this condition, statistics vary. In some large clinics no such complication has been found. One observer states that small detachments are not infrequent, having no symptoms and are only discovered by examining the placenta and finding adherent, old or partially buried clots. These clots must not be mistaken for apoplexies of the utero-placentary union. In the Chicago Lying-in Hospital six cases in 3600 labors were noted, two of which required treatment. In the New York Lying-in Hospital, among 10,000 cases, there was no such complication reported. Churchill found in 68,982 labors taken from various sources, 85 accidental and 174 placenta prævia hemorrhages. Holmes, from various statistics, makes an estimate of the frequency of the condition as one in two hundred as of pathologic interest, and one in five hundred for clinical importance. The frequency of absolutely concealed cases can not be stated. Cases computed by Goddell and Holmes show only 113 reports of absolute concealment. Some such cases probably are not diagnosed because of sudden death.

Original Case. Mrs. M. M., Finn, aged 35. It was her fourth pregnancy. She had one forceps delivery, probably because of convulsions. She was delivered by me on October 29, 1903, labor tedious, but spontaneous; baby was large. Patient menstruated last time, April 1, 1905. From this time until December 29, she felt very well, not requiring any medical attention. On December 28 she scrubbed the floors of two rooms, did a washing and was feeling as usual on retiring. At about 12:30 A. M. of December 29 she suddenly awoke with a sharp pain extending over the lower abdominal region. Later pain was felt in the right hip. She sent for me about 10 A. M. I found her in bed on her back, complaining of pain in the abdomen and right hip. Pain was not intermittent, but continuous. She was very restless and feared she was seriously ill; the skin and mucous membranes were very pale and she complained of considerable thirst. Temperature was 99; pulse 140 to 150. The uterus was very hard and tense and seemingly greatly distended. It was uniform in size and extremely tender on pressure. Vaginal examination showed cervix not effaced; os admitted one finger, membranes intact, head presenting; no uterine contractions; no hemorrhage. Patient felt fetal movements in the morning but they ceased a short time later. Fetal life could not be detected.

Condition was diagnosed as premature detachment of the placenta with concealed hemorrhage. She was given ¼ grain morphin, hypodermically, stimulation and salines, liquid diet, and kept absolutely quiet. On the afternoon of December 29 vomiting began and continued from six to eight hours; she complained of constant pain. Ten grains of quinin were given but no labor pains were brought on.

December 30, temperature was 99⅘; pulse 140; patient was feeling some better; vomiting had ceased; uterus was boggy and, on pressing over the fundus, indentations were produced. Cervix was not effaced, os admitted one finger. At this time, thirty-six hours after onset of the illness, she passed a quantity of dark, liquid blood. This flow, which at no time was alarming, continued for four hours and then ceased.

December 31, temperature was 100⅘;

pulse 132. She felt better and stronger, taking semiliquid nourishment; skin was dirty yellow color; urine negative for albumin.

In consultation with Dr. G., we decided to wait longer for labor pains, as the patient was daily becoming stronger. Cervix was almost effaced; os admitted two fingers; membranes were tense.

January 1, there was little change; pulse slightly slower and temperature higher. The rise in temperature was thought to be due to the absorption of blood; skin and membranes had a more natural color.

January 2, breasts were enlarged and contained some fluid. Temperature was 101⅗; pulse 120. She was feeling well, no chill.

January 3, temperature was 101; pulse 116 to 120; the cervix was effaced, os dilated to size of silver dollar and membranes tense. The vagina was packed with sterile gauze; strong pains came on several hours later and continued during the night. A macerated child was born at 9 A. M., January 4, after labor lasting eleven hours. Immediately after, a large mass of old, dark, firm clots was expelled, the placenta was free and came after the clots. The patient did not lose a drop of bright red blood during this labor. After delivery, temperature was 99⅗ and pulse 96. Her condition had lasted six days and nine hours. At 5 P. M. temperature was 101½ and pulse 116. The temperature became normal in several days and recovery was rapid and uneventful. There was no infection.

The causes of this condition have been divided into exciting and predisposing. As exciting causes, violence, such as falls and blows, violent exercise, emotions, and a short cord, may be mentioned. Most authorities believe that such causes directly, rarely, if ever, are a cause of detachment but in the presence of certain pathologic conditions they would be a material factor. Predisposing causes are generally pathologic. Endometritis is considered the most frequent cause. We find a large percentage of detachments in multiparous women in whom endometrial disease is most common and statistics show that between the ages of twenty-five and thirty-five the largest percentage is found. We must remember that a larger percentage would probably be found after thirty-five years of age were it not that only ten per cent. of labors occur during that period. Renal disease, calcareous degeneration of the uterine vessels, and placental changes and disease have been mentioned as other predisposing causes. In the case reported, no cause could be assigned unless the washing and scrubbing of the previous day may have acted as an exciting cause; the cord was not too short and I could find nothing pathologic in the placenta.

The most important symptom is hemorrhage with its resultant constitutional effects. The hemorrhage may be retained within the uterus or some of the effused blood may escape. In the case reported the hemorrhage was absolutely concealed for thirty-six hours; then followed external bleeding of dark blood for four hours after which it ceased. Distention of the uterus is always present when the hemorrhage is of considerable amount. Its degree depends upon the tonicity of the uterine muscle and whether or not any blood escapes externally. When the muscle has little tonicity or when blood is retained for several days the uterus may be boggy. The distention causes severe pain, which, with the loss of blood and the stretching of the uterine muscle, causes considerable shock.

The diagnosis in this case was made when the hemorrhage was absolutely concealed and based upon the shock, evident loss of a large quantity of blood, severe pain, uterine distention and the cessation of fetal movements and life. The expulsion of a large mass of old, dark, firm clots with the placenta, after the birth of the fetus which occurred without the loss of a drop of bright red blood, was confirmation of the correctness of the earlier diagnosis.

Premature detachment might be mistaken for placenta prævia, uterine rupture, abdominal colic, and fainting attacks. In placenta prævia the examining finger will feel the placenta; there will be hemorrhage of bright blood and little or no distention and pain. Fetal movements will be present. Rupture of the uterus generally occurs after many hours of labor and after the rupture of the membranes. In colic and fainting spells we are likely to get some suggestive history, and, finally, an estimate of hemoglobin and a blood count would be conclusive.

The maternal mortality is uncertain, depending upon various conditions, the amount of blood lost, degree of shock, the condition of the os, whether or not the patient is in labor, the duration, and the treatment. Goodell gives the mortality as fifty-two per cent.

In the treatment one must meet the conditions in each case. Much will depend upon the amount of blood lost, its rapidity of loss, whether or not labor is present and the condition of the os. Mild cases, under medical treatment and quiet, often go to term. In severe cases when the os is dilated the fetus should be removed as rapidly as possible. When the os is not open an attempt should be made to hasten labor by drugs and mechanical appliances. The patient should receive constitutional treatment, salines, and stimulation. Some authorities recommend the use of ergot. In the case reported the os was in no condition to attempt immediate delivery, the patient was not in labor. She was too weak to endure any operative procedures.

Treatment was directed to the loss of blood and for shock. Quinin failed to bring on labor. Ergot was not given. As her condition improved after the first day, we did not hesitate to wait some time for spontaneous delivery which occurred after six days and nine hours. Labor was brought on by packing the vagina.

In the preparation of this paper valuable information and statistics have been received from a communication by Holmes in the *Journal of Obstetrics*, December, 1901.

A BRIEF ACCOUNT OF METHODS OF STUDY AND TREATMENT AT THE HENRY PHIPPS INSTITUTE, PHILADELPHIA.

BY ALBERT PHILIP FRANCINE, A. M., M. D.,
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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

I have been lead to present this paper, with the sanction of the Phipps Institute, for two reasons; first, I felt that the details outlined below would not be without interest to the profession at large; and, second, it was actually brought about, if the expression may be permitted, by having exploited to me, by two distinguished Philadelphia physicians at the last meeting of the American Medical Association in Boston, certain methods of study and treatment (modestly suggested as worthy of imitation or adoption on our part), which had been in vogue at the Phipps Institute ever since its foundation. It is, therefore, with an apology for the technical character of this contribution, and also for any hint it may unintentionally convey of self-complacency on our part, that I present it here.

There are three aspects in which the work at the institute must be reviewed,—the clinical, the laboratory, and the educational or sociological side. I will consider only the most salient features of our work and will first review our clinical methods.

The principle carried out in the treatment of these cases is that of giving the maximum amount of study and care to the individual case. There is no hospital in this country nor Europe, so far as I have been able to observe, and I have looked into the matter widely, where every case is so accurately studied both clinically and pathologically, and where the records are so admirably symmetrical and so carefully kept as at the Phipps Institute. For the clinical and pathological records of any series of cases to be of the greatest value for statistical or other purposes, every detail of the cases must be systematically studied, and symmetrically and accurately noted. This is only possible where printed forms are used, and a glance at the record sheets of the institute will speak for itself. (Published in Second Annual Report.) It is not enough to have printed forms, but they must be unfailingly and accurately filled out in every case. This in regard to the clinical records is indirectly accomplished at the Phipps Institute by having two history committees, one of the house staff and the other of the dispensary staff, who go over the history records of the new cases at stated intervals, and report as to any omission they may find, not only to the individual physician in charge of the case, but to the assembled body at the weekly meetings of the staff. All omissions must then be filled in at the next visit of the patient. Every record must thus be completely filled out, all the data of symptomatology and physical examination must be reported upon either negatively or positively,—it is a *sine qua non* of remaining a member of the staff.

It follows that for even the most skilled and quickest worker, it requires at the very least from an hour to an hour and a half to report on every new case. The great advantage of this system, to my mind, is not so much in the perfect records resulting as in the training inevitable in those carrying it out,—a kind of training with its painstaking scrutiny of detail which is so essential for those who would fit themselves for the study and treatment of tuberculosis.

It follows, therefore, that the admission of new cases, to the wards on account of the number of beds, and to the dispensary services on account of the detailed study required in each new case, is necessarily limited. This might at first sight be considered as reducing the efficiency of the service at the Phipps Institute in regard to mere numbers, but it is compensated for and overshadowed by the thoroughness of the service in regard to the individual case, which is after all the fundamental principle in the study and treatment of this disease.

The ward cases are necessarily limited to fifty-two, the number of beds available. There are eight physicians in charge of the wards, so that each has under his immediate care approximately seven beds. Only cases too far advanced or patients too ill for dispensary treatment are referred to the wards, in which they remain for a variable period, as a rule, three months or longer. There is thus ample time and opportunity for their clinical observation. It follows that there is usually a long waiting list for admission to the wards. Sometimes it takes six weeks or two months before there is a vacancy. Patients are admitted in the order in which they apply.

The same is true of the dispensary service; though the waiting list is not so long, it usually requires about three weeks before a patient can be seen after application to the office. It differs in this from routine dispensary service where all cases are hurriedly, and too often carelessly seen. Under the detailed study required in each case at the Phipps Institute, it is impossible for the physician in charge of a dispensary service to see more than one new case (and his old patients), a day. There are twelve physicians in charge of this service, each with two clinics a week, there being daily clinics at 11 A. M. and 2 P. M.

There were 195[1] new cases admitted to the wards during the past year, giving an average per man, on the house staff, of twenty-two new cases a year. There were 690 new cases admitted to the dispensary service, giving an average per man on the dispensary staff of fifty-eight new cases a year. These figures represent new cases only, as there was a grand total of 1561 patients treated, of which 1382 were seen in the dispensary and 294 in the wards: 115 were treated both in the dispensary and wards.

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[1] The figures quoted throughout are taken from the Second Annual Report.

Old patients must return to the dispensary at least once in every two weeks; if a month elapses they are discharged *ipso facto*. The record of the respiration, pulse, temperature, and weight is taken at each visit, and notes made of the treatment and progress of their condition. A full reëxamination of the chest is required in every case once every month in the wards, once every three months in the dispensary. I want to repeat that this system in all its details is not left to the happy coöperation or passing fancy of the physicians in charge, but is unequivocally required. No assistants are allowed; every man must do his own work and be responsible for it.

After the patient has been examined on his first visit, he is given sputum cups, paper napkins, and bags for the street, a printed list of rules to follow, and is fully instructed, first by the physician in charge and subsequently by the clinic nurse who gives him his supplies, as to prophylactic measures. It goes without saying that his treatment is carefully outlined for him; and if he is poor he is given a daily allowance of milk, up to four quarts.

Following his first visit, and every two weeks thereafter, he is visited at his home by an inspectress from the institute, who instructs him and his family in the details of treatment, sees that the rules of the institute are posted up in his home, and sees, further, that the directions and regulations are carried out. This is, of course, very essential, as left to themselves these patients, many of whom are ignorant and careless, can not or will not follow instructions however carefully laid down. Part of the nurse's duty is to select his room for him, show him how to avail himself of the greatest amount of fresh air and sunshine, where possible, by camping out on the roof or making use of a yard or porch; she also sees that he sleeps alone, follows instructions in regard to rest and diet, and the many other details of treatment which are so essential to a successful issue. The printed rules of the institute and the blanks for the inspectresses' reports, which are incorporated with the history of each case, may be seen in the Second Annual Report.

In addition to the clinical study of the condition of the lungs and the cardiovascular system, and a most detailed report on the rest of the body, by the physician in charge, the case is referred for further examination to the various specialists on the staff for examination or treatment as may be necessary. Their reports, which may be seen as above, are again incorporated with the original history of the case. There are five clinics in the specialties; *i. e.*, in laryngology, neurology, dermatology, ophthalmology, and genitourinary diseases.

Every case in the wards or dispensaries is at the disposal of any member of the staff for examination and special study, so that all clinical material is available for those making special clinical or pathological studies of any feature or organ in tuberculosis. It is no uncommon thing for a case, particularly in the wards, to have a half dozen chartings of the condition of lungs and heart made by as many members of the staff,—some to be confirmed, others to be disproved by the subsequent autopsy.

Every Monday evening throughout the year, excepting during July and August, there is a meeting of the staff at the Phipps Institute, Third and Pine Streets. The members of the staff are not left to the promptings of their own sweet wills in regard to attendance on these staff meetings; regular attendance is required. Let me say that we are under a strong hand and a wise head, yet colleagues and hearty coöperators with the director in every sense; but strict business principles, modified it is true by the professional view point, are followed throughout in the executive administration of the institute.

At these weekly staff meetings every phase and feature of tuberculosis sooner or later comes up for discussion. Individual cases are sometimes shown; pathological reports, the question of drugs and treatment, the work of others, the latest literature,—all come up for informal discussion or analysis under the moderatorship of Dr. Flick in the chair. We convene at half past eight and never adjourn until ten thirty, more often at eleven o'clock. It need hardly be pointed out that these meetings are of inestimable advantage in many ways, not only educationally to all concerned, in threshing out views and experience, in developing ideas and stimulating fresh endeavor along new and old lines, but also in developing a mutual regard and close acquaintanceship, which is such an important factor, not only in the welfare of the individual, but also in that of the institute. Indeed I do not want to be accused of sentimentality or partisanship when I say we are brothers, with one view and one aim. There are no jealousies, and the aims of the Phipps Institute come first.

During the past year, lest this close association should result in narrowness, we have arranged a plan whereby at stated intervals men distinguished in this work are invited to address us. In this way, during the past year, Minor of Asheville, and Klebs of Chicago, have come to us and given us the benefit of their views and experience upon one or another of the many interesting phases of this disease.

In concluding this section of my paper let me in all modesty call attention to the right of the institute to be heard and to speak with authority. The experience of the staff of the institute, with its large opportunities for both clinical and pathological work, is truly vastly greater than any other group of men in this line of work (certainly in this country). Aside from the material at the Phipps Institute, through staff appointments in other hospitals, we control 621 beds,[2] fully three quarters of the hospital resources available for tuberculosis in Philadelphia and its vicinity. It follows, too, that our experience from private work is very wide, speaking collectively, for it must be admitted that the laity are alive to the question of tuberculosis and that, if not at once, sooner or later they seek out those specially interested in or identified with this disease. All of this experience reacts to the advantage and benefit of every member of the staff, because directly or indirectly it is analyzed and threshed over in his presence every Monday night.

THE LABORATORY SIDE.

No medical institution can have the fullest usefulness or accomplish its highest purpose, in which laboratory investigation or scientific experimentation is not part of its life. Inevitably it must drop behind in the march of progress, eventually must cease to have a higher purpose than that of routine or local usefulness. It is only where aims are high and altruistic, where much is attempted and striven for, where much is dreamed of and hoped for, that a little of the true harvest of accomplishment is garnered.

Not secondary to the clinical side of the Phipps Institute, but going hand in hand with it, is its more strictly scientific side. Of course routine examination of urine and sputum are made and repeated in each case, but it is not of that I would especially speak. Conditional for admission to the wards is the execution by the patient and his nearest relative of permission for an autopsy in event of death at the institution. Every case, in which the patient dies in the Phipps Institute, is posted. Every member of the staff is notified by mail of the hour at which the post will take place. During the past year out of 294 admissions to the wards there were eighty-eight deaths with autopsy.

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[2] Beds: Phipps, 52; Philadelphia Hospital, 180; White Haven, 190; Sunnyrest, 60; Fern Cliff, 40; Lucien Moss Home (Jewish Hospital), 39; Orchards, 15; Dermady, 25; Chestnut Hill, 20; Total, 621.

The autopsy examinations in these cases are most exhaustive from the pathological point of view, as may be seen from a glance at the published record sheet (Second Annual Report) of the pathologist. In addition to the examination and report on the entire body, cultures are taken of all the organs. Finally sections of all the tissues are made and careful histological reports are made in every instance. Interesting specimens are permanently preserved in the pathological museum.

To certain members of the staff the various organs are assigned for detailed examination and study. Opportunity for special research is made possible through the setting aside of a certain sum of money available for the endowment of eleven scholarships open to members of the staff, and the establishment of well equipped laboratories. These scholarships vary in amount from two to twelve hundred dollars, and are assigned according to demonstrated ability or special interest in a given subject upon the part of a particular member of the staff. They apply not only to strictly pathological or bacteriological work, but also to investigation along sociological and clinical lines. A scholarship, involving as it does a special line of exhaustive research, is not to be lightly undertaken, for much is demanded of its recipient. The work is definitely mapped out in all its details, and the amount of time to be spent daily in the laboratory is definitely set forth. The scholarships cover a period of one year, and are very far from being sinecures.

These scholarships were not available during the first two years of the institute's life, but an idea of the kind of work required, and the fitness of the members of the staff to carry out such work, may be had from the authoritative and splendid monographs of Pearson and Ravenel on immunity in animals and man, respectively; from McCarthy's work on the nervous system; from Walsh's pathological and clinical studies of the kidney; from Ullom's studies of the liver, published in the Second Annual Report; not to mention scientific and clinical studies published there and elsewhere by Landis, Stanton, Irwin, Carncross, Craig, Norris, and others.

Following the death and autopsy of a patient, the case comes up for analysis and discussion at a weekly staff meeting, in relation to the clinical findings. The physician who had charge of the case reads the history and demonstrates on the blackboard the physical signs as he elicited them and the factors influencing his diagnosis. The pathologist follows with his report of the postmortem findings, with the morbid specimens on the table before him. Following the report of the pathologist the bacteriologist makes his report on the results obtained by staining methods, culture products, and animal inoculation. Under microscopes on another table are histological sections of the various organs and tissues.

A recess is then taken to study the various exhibits. The meeting reconvenes and a general discussion follows, and woe to him of the staff who has overlooked a cavity or failed to locate an empyema, or whose diagnosis may be at fault in other particulars! It is ever the tongues of our friends which are the most merciless and the most poignant. Let me add in justice to the members that while errors and discrepancies do occur, yet in general it is really quite remarkable how accurate and complete the clinical diagnoses are. The clinical diagnoses are not confined to the condition of the lungs alone, but the heart, liver, kidneys, intestines, and other organs are reported upon, and it is surprising how often congestion and tuberculosis of the liver, ulceration of the intestines, or miliary tubercles in the kidney will be diagnosticated correctly when the clinical data justifying the diagnosis might easily have escaped less detailed and expert examination.

THE EDUCATIONAL OR SOCIOLOGICAL SIDE.

The primary purpose of the founder of the Phipps Institute was, of course, philanthropic, and much attention is given not only to curing patients and alleviating human suffering, but also in the furtherance of the crusade against tuberculosis. The wards of the Phipps Institute in taking dying patients in advanced cases out of their squalid surroundings, where they are most dangerous to others, accomplish a great work in eliminating foci for the spread of the contagion; the dispensary service with its careful instruction in prophylaxis, its constant supervision of cases by regular inspection and by furnishing them with prophylactic supplies, enhances further its influence in this direction. But it is chiefly from the education of the public through its individual members and the stimulation of their active coöperation that the greatest strides in preventive medicine must come. With this in view the members of the staff in response to invitations from all over the state and from all kinds of philanthropic and educational organizations, are constantly being sent to deliver lectures or read papers. There have been during the year more than thirty-five such lectures delivered. The results of these efforts are not insignificant.

The members of the staff of the Phipps Institute took an active part in bringing the tuberculosis exhibit of the National Association to Philadelphia, under the auspices of the Pennsylvania Society for the Prevention of Tuberculosis. This can readily be inferred when I say that the president, secretary, and eleven of the fifteen directors of the society are members of our staff. Of the twenty popular addresses given by physicians during the sojourn of the exhibit in Philadelphia (where it was attended by over 58,000 people; more, in fact, than saw it in New York and Chicago combined) nine were given by members of the Phipps Institute staff. Four members of our staff are directors of the National Association for the Study and Prevention of Tuberculosis.

In conclusion let me briefly recapitulate the salient features discussed at greater length above:—

1. The maximum study and care of the individual case.

2. Careful study of all clinical data, and their accurate and symmetrical recording in every instance.

3. Stated period within which reëxaminations and a complete recharting must be made in every case.

4. Special committees to examine the clinical records and report to the physician in charge and to the general body of the staff as to their condition.

5. No assistants; every one responsible for his own work.

6. The sense of responsibility to the institute and to the standards laid down, thus developed.

7. The features of the weekly staff meetings. Every man's work subject to report and analysis. Everyone's experience and ideas at the disposal of the others.

8. All cases, in which the patients die in wards, posted, followed by the complete pathological, bacteriological and histological report of the case, with the morbid exhibits, made to the staff, in conjunction

with the clinical history, physical signs, diagnosis and treatment. Special lines of treatment, research work, and other phases of the subject are repeatedly threshed out.

9. Scholarships and opportunities for special research.

10. The influence of the institute along sociological and educational lines.

Finally, then, I have attempted briefly to tell you a little of the story of the Phipps Institute. Much may be inferred from what I have left unsaid. I hope I have not appeared to make any unjust claims or arrogate virtue which we do not possess. If by mischance such should appear to any one, I will ask that it be put down to my own enthusiasm and that the entire responsibility for it be borne by myself.

PSYCHIC REMEDIES AND THE IRREGULARS.

BY MARTIN J. SWEENEY, M. D.,
Kane.

(Read at the meeting of the McKean County Medical Society held at Mt. Jewett, April 2, 1907.)

When I was a student at Bellevue Hospital Medical College I listened to a great many lectures, attended numerous anatomical, physiological, pathological, surgical, therapeutic and special clinics, did a great deal of laboratory work and sat in a great many quizzes; in brief, I went through the routine processes that young men usually go through to acquire the degree of M. D. In all the training I received I was taught to look on the human subject as a machine, a piece of mechanism; the most wonderful machine in existence, it is true, yet, withal, a machine. I was given to understand that if I wished to practice medicine I was to acquaint myself thoroughly with the component parts of this machine in health and disease. When the machine was out of repair, when it was disabled, I was to treat it, but always in a material way, with material remedies, as one would treat any other machine. In putting it in order I was taught the value, uses and abuses of food, air, sunshine, water, exercise, sleep, climate, drugs, massage, electricity, surgery and temperate habits, but, if my recollection serves me correctly, and I believe it does, I was taught very little, if anything, of the value of psychic influences in health and disease, or of the "mysterious tenant" residing within and animating the machine itself.

Percy B. Shelley and Lord Byron, with their wives, who, by the way, were gifted literary women, were summering or wintering in Switzerland. In order to stimulate the budding genius of their wives, Byron and Shelly conceived the idea of offering a prize to the one who could compose the most weird and original tale. As a result of this competition Mrs. Shelley, I believe, wrote "Frankinstein," the story of an inventive anatomist, who, after years of exhausting trial, study and effort, constructed out of material things, a human form so perfect in all its anatomical parts, that, when, at a given time, the anatomist breathed into his nostrils, he began to move, live, walk, talk, eat, and from a material standpoint, to act as other human beings did. For a time the anatomist kept this mechanical miracle in confinement. One day, however, the automaton, eluding the vigilance of his keeper, escaped and sallied forth on a career of pillage, rapine, plunder, seduction, and universal crime, so awful in its scope and character that he became a menace to every community he visited. Cities, towns, and country sides organized posses to capture this soulless demon. They did not, however, succeed in apprehending him, and after a criminal career of several months the story leaves him, still pursued, still heaping maledictions upon his maker and pursuers, on an iceberg, floating off into unknown and uncharted polar seas. (It is a long time since I read the tale and the facts as stated may not be exact, but for purposes of illustration they are exact enough.)

The anatomist, the creator of this mechanical marvel, this monster without soul or conscience, had forgotten in his creative work the prime essential to a perfect man, the mind, the soul.

The point of the story, as far as this paper is concerned, is that it was "Frankinstein," the mechanical, the soulless, mindless man, that I studied at college. It is "Frankinstein" that is too often taught and studied in our medical colleges. The psychic part of man is either forgotten or glossed over with a few cynical words or flourishes. Most of us, under the influences of a strict materialism, are still treating the man, the body. We forget that mind, or soul, or psyche, and the living body are one and indivisible, and that the body can not be treated intelligently or successfully apart from the mind. We are, nevertheless, dazzled by the "glittering achievements of science," the findings of pathology, bacteriology, chemistry, physiology, macroscopic and microscopic anatomy and by a thousand and one scientific theories of disease based nearly always on material things. We study our patients with "one eye" only, "The practical, the material eye, which looks only upon the body, instead of viewing them with both eyes, one for the body, one for the mind; the one eye imaginative and philosophic, the other practical and observant," the two combining in the mind of the physician to form a clear-cut mental photograph of the individual case. Most of us realize this; some of us know it; but few of us observe it in our daily practice. Little by little as the years have slipped by, I have been forced to admit to myself, if not to my patients, that regular materia medica did not always adequately meet the needs of many patients who visited me in my offices or whom I saw at the bedside. I have realized for a number of years that there were therapeutic agencies and resources, for the most part employed by quacks, charlatans, humbugs, and itinerant physicians, more potent in many cases than any remedy I was familiar with or at least any remedy I felt privileged or competent to use.

Quacks, charlatans, new thought, higher thought, and mental science healers, Christian scientists, osteopaths and psychopaths, all this class, in fact, long ago recognized and appreciated the mental element in both functional and organic disease, and, while they may and usually do use some material agencies, yet, for the most part, they operate and medicate principally through the mind. Their successes are so numerous that, ridicule them and their so-called dupes as we may, the fact remains, nevertheless, that the believers in many of these forms of treatment are on the increase, they have a large clientele wherever they locate and will so continue to have until we, through careful study and sifting, put upon a clear scientific basis, and adopt into regular medicine, the ideas that are true and good in all these cults and isms.

They lay stress on faith, hope, credulity, anticipation, assurance, personality, motive, suggestion and hypnotism. Why should not these, honorably and intelligently employed, be in our hands, just as legitimate therapeutic agents as arsenic, strychnin, electricity, massage, certain mineral waters and so on, and why should we refuse to use them? Some of the regular profession, I grant you, are using and have used them from time immemorial, not always wisely or intelligently, oftentimes unconsciously; but, to the vast majority of physicians, subconscious therapeutic remedies, such as suggested, are *terra incognita*. The nonuse of psychic therapeutics among the profession is explained partly by the belief held by many that such agencies and methods are unethical, dishonorable and illegitimate. Anything that conduces to the comfort, well-being or cure of the patient, we have a right to use and ought to use, whether it is a placebo, a nauseating draught, or a few magic waves of the hand. One of the most valuable therapeutic agents we possess is the personality of the physician. It has never been incorporated into the pharmacopeia, but it will be some day.

This truth was forced upon me early in my practice. I had cases where as far as the mere drug treatment of the case was concerned, I was managing according to the most approved methods, but the patient lingered and did not recover. At last I would be dismissed or a consultant forced upon me and with the same drugs, possibly a different excipient or menstruum, the patient would begin to improve at once. What effected the change? Suggestion, a new personality, new environment, new assurance, a new line of talk. More cures are wrought through psychic influences, either consciously or unconsciously administered or received, than we have any idea of.

Have you never observed how the faces of the friends and relatives of a very sick man, woman or child light up when you make your call if, perchance, you are the regular family physician and have their confidence? Have you not noted how even the patient seems better the moment you appear? Suppose a strange physician is called for one of your families in an emergency; what a sigh of relief goes up from everybody concerned when you appear and assure them that everything has been done that could be done! How many times do you hear patients say of a doctor whom they had while you were out of town, that they took his medicine but it did not help them any because they had no confidence in him! This of itself is instructive as showing that even the laity recognize the healing influence of personality.

How does the osteopath cure his cases, in some of which you have failed? Surely there must be some mysterious influence exerted on the subconscious centers of the mind which stimulates the nutrition of diseased parts and starts them toward recovery. It is a common thing to have osteopathic treatment succeed in hysteria and allied neuroses when regular medicine has failed. Surely, we are as intelligent as six weeks' or six months' students of osteopathy! Let us, therefore, in selected cases dose the body less and the mind more.

Whether we believe in "the Lydia Pinkham of the soul," Mrs. Mary Baker Glover Eddy, or not, we must confess that she is one of the most powerful therapeutic agents this country possesses at the present time. Among the deluded, if we choose to call them such, are college presidents and professors, ministers of the gospel, and teachers, physicians, lawyers, statesmen, and prominent men in every walk in life. I grant you that the whole structure is based primarily on fraud, innocent or mercenary, but, fraud or not, it expresses so plainly that "he who runs may read," the great truth that mind, speech, opinions and beliefs influence mind and body in health and disease, and that it does make a great deal of difference to the sick body what goes on in, or is introduced into, the mind of the patient by the physician.

The subconscious mind, the subliminal self as psychologists choose to call it, does materially influence and alter the nutritive processes and action of the various organs of the body. "Not a thought nor idea can take place in the mind that does not have a corresponding effect on the body." Witness the effect of sorrow, grief, bad news, anger, disappointment, and many other emotions or the counterpart of these, joy, good news, pleasurable anticipation, agreeable thought, on sleep, appetite, digestion and nutrition. "If these things can alter the action of the whole or individual parts of the body for a short time, why not for a long time and why not ultimately produce disease?" some one has asked.

"Science," according to Dr. McComb, "suggests that the subconscious self is that portion of our nature that is most closely related to the functions and organs of our physical nature. It is this self which sees that the commands of the will are carried out. It contains within itself these healing and recuperative processes that take place in silence and darkness, usually in sleep."

We all make use of unconscious therapeutics more or less, but very few of us do it consciously or intelligently. We act, and apparently feel, that the only things worth while in the treatment of disease are material agents. Our patients, however, have always been influenced and will continue to be, through their eyes, ears, nose and mouth, as well as through their internal organs, and therefore, what we are, what we say, what we do, how we do it, what the drug looks like and tastes like, have fully as much to do in effecting a cure as the action of drugs on the body itself.

I will admit that this country is under the influence of a great psychic wave, and that one is apt to be carried away by it, but underneath the foam caused by the wave, are various deep and underlying pebbles of truth which you and I ought to bring to the surface and fathom. The United States is filled with clairvoyants, sooth sayers, mental healers, Christian scientists, osteopaths, psychopaths, astrologers, mystics, *et id genus omne,* whose main design is to divorce the public from a little of its surplus cash, but each of these cults has a certain element or kernel of truth in it, else it could not appeal to large bodies of people over any considerable portion of time, and it remains for you and me to discover and utilize this truth in an intelligent and honorable way for the benefit of mankind.

These cults and isms meet with their greatest successes in the treatment of that protean disease or symptom complex called hysteria. My teaching was that hysteria, neuromimesis, was an affection for the most part within the control of the patient, a something that could be put on or off like a coat at will, and was to be treated, if treated at all, by bluff subterfuge and distinguished disrespect. I was also taught that while it occurred occasionally in men, for the most part it was the proud possession and peculiar prerogative of the sex with the uterus. I have, however, learned through experience that it respects neither age, sex, race, creed, climate, nor previous condition of servitude. Now this bizarre, this kaleidoscopic disease, afflicts countless thousands; in fact, it enters more or less into every disease, this moral egotism, and it is from this army of afflicted that quackery principally makes its living.

The regular profession is too apt to look upon the subjects of hysteria as though they were a band of malingerers with a group of studied and premeditated symptoms, acting from design to confuse and befuddle friends, relatives, and even the physician himself. We tell them or, at least, their friends, that their troubles are imaginary and think we have acquitted ourselves creditably and honorably whether the patient gets rid of his imaginary trouble or not. Personally, I do not believe there is such a thing as imaginary pain. A patient either has a pain or he has not. Pain may arise through suggestion by way of the subconscious mind, without functional or organic disease as a source, but such pain may be as real to the patient as the pain from a bruised nerve.

The hysteric is seeking relief from symptoms and not esoteric, etiologic reasons why he should continue to carry them around with him as heirlooms from the dear departed. Right here is where you get off and the irregulars with patience, interest, sympathy and suggestion get on.

Now why have I taken up so much time in such an irregular way and on such an unscientific theme? It is a protest against the country practitioner or any regular practitioner, in fact, ignoring or refusing to treat in a psychic way the psychic part of his practice. It is a protest against the exclusive laboratory methods as taught in our schools. We hear much of new germs, their size, shape, motility, and how to stain them; we hear much of new drugs emanating from French and German synthetic laboratories: new treatment of typhoid, pneumonia, and appendicitis confronts us constantly at medical societies, in the magazines and in our text-books; the moral beauty of our ethics, the greatness of our scientific achievements are chanted world without end, amen: but while we are busy talking of and experimenting on man, the machine, and proclaiming to the world what wonderful fellows we are, the great body of irregulars is developing the much neglected psychic side of our profession.

There has never been a new cult or ism or pathy from which we have not learned something of benefit to mankind. Let us take to heart the lessons in the efficacy of unconscious therapy which are now being taught by so many irregulars. Let us take more interest in the patient and less in his disease; more interest in John Jones alive than John Jones, an interesting case, but dead.

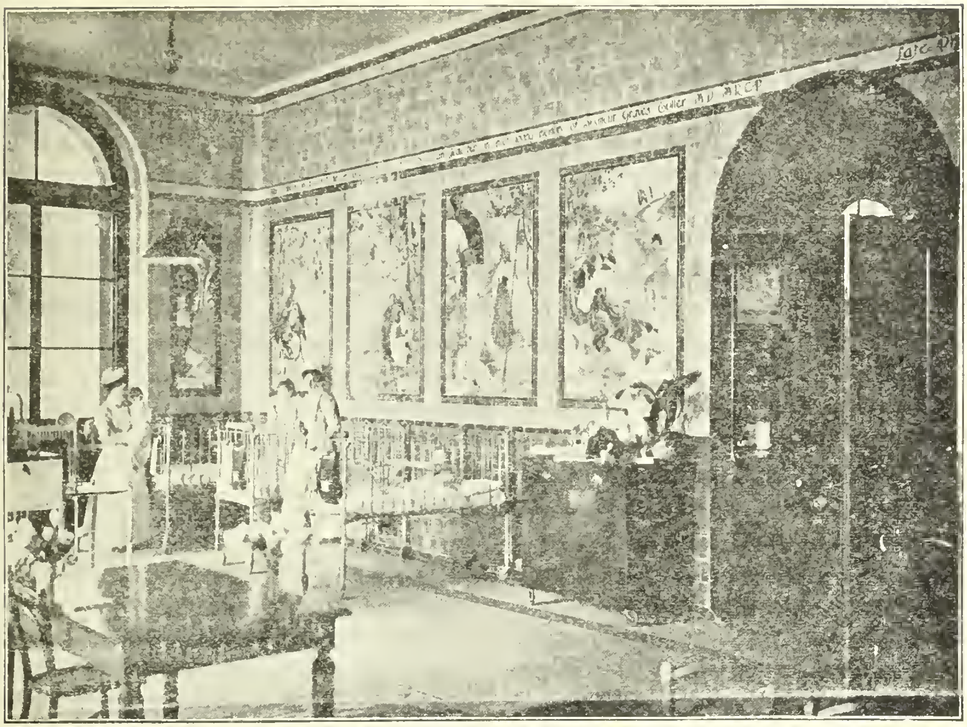
Anything that we give to, or do for the good of, the patient and not for the good of the doctor is regular, is legitimate, whether we subtracted it from Mrs. Eddy's Christian science, Madam Blavatsky's theosophy, the Kirkville school of osteopathy, or the veriest medical quack in existence. I consider it a pity to turn over to the patent medicine venders, quacks, charlatans, religious poseurs, and all this class, an ever increasing number of sufferers each year, simply because we do not deign to use therapeutic measures with which we are as fully acquainted and competent to use as they.

THE CHILDREN'S WARD.

BY CHARLES JAMES FOX, PH.D.,
Washington, D. C.

In the interior construction of our hospital wards and operating rooms the aseptic floor and walls, things absolutely essential from a sanitary point of view, have been sought after so earnestly that the hospital architect seems to have come to the conclusion that when once he has obtained a substantial germ proof floor and walls, which will not absorb dirt and moisture, are easy to keep clean, and are not injured by several powerful acids which are used as disinfectants, he has done everything that can be expected of him. The decorative feature of the floor and walls is something which he absolutely overlooks. Yet in the hospital, above all other places, the rooms should be bright and cheerfully decorated so that the life of the inmates, at best cheerless and monotonous, may be made as happy as their surroundings will permit.

The main purpose of artistic decoration is to give pleasure to those who observe it, and why should the inmate of the hospital be deprived of this source of enjoyment and forced to lie for hours, and perhaps days and months, staring at plain and monotonous floor and walls? The negligence of the average hospital architect in this respect is the more reprehensible as the very material which is the ideal covering for hospital floors and walls, namely tiling, lends itself to such an infinite variety of forms, shapes and color that it is capable of being used for the most elaborate decorative purposes. When we compare the plain white oblong tiling, seen on the floors and walls of most of our hospitals, with the elaborate ceramic mosaic floors and beautifully tiled walls met with in many of our private residences, hotels, theaters, railroad stations, and other public buildings, we hardly realize that the two are made of the same ma-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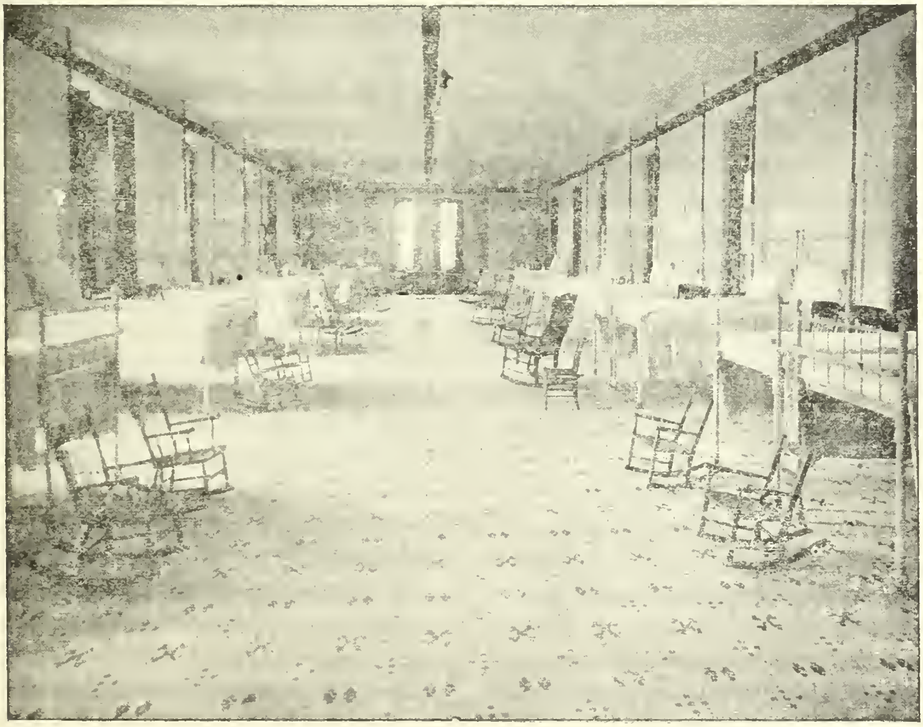

terial. This is, however, the fact, and the ceramic mosaic floor and the elaborately decorated tile walls are just as durable, just as germ proof, just as easy to keep clean, just as aseptic, and almost as cheap in price as the plain white variety. As the most attractive ceramic designs can be laid out mechanically and come from the factory already put together on pasted sheets of paper, their price puts them within the reach of every one who can afford to use tiling of any kind. This is, of course, not true of marble mosaic, each piece of which has to be cut and fitted by hand. Marble, however, is, for numerous mechanical and chemical reasons, not a good floor for a hospital.

In many English hospitals advantage has been taken of the artistic as well as of the sanitary properties of tiling. The accompanying cut illustrates a children's ward, the tiled walls of which are laid out in beautiful pictorial designs in which the little patients take the most lively interest and delight. With all the sanitary precautions of the most hygienic ward, this room has at the same time the appearance of a nursery. As the eyes of the little patient wander about the room, some lively and interesting picture soon catches his attention and takes his mind from his pain and suffering. Even in this age of commercialism no architect or contractor who once sees the pleasure derived from these tiled pictures, will take into consideration the slight additional cost between the plain sanitary wall and the decorated sanitary wall.

These decorated walls should not be confined to the childrens' ward, as even adult patients will find the monotony of their existence much alleviated by artistic surroundings. The main reason for removing all decorations from the walls of hospitals was the fact that they become the refuge of dangerous microörganisms. But this does not apply in the case of tiling, for the decorative tile is as absolutely germ proof as the plain white variety.

Another illustration shows a ceramic mosaic floor in a dormitory. This floor is, as a rule, more attractive and is quite as sanitary as the ordinary tiled floor. All that has been said about decorative walls applies to a less extent, of course, to the floors. But even the floors of the hospital are capable of decoration, and as this decoration, and the pleasure derived from it, does not detract from the sanitary qualities of the walls and floor, and costs but very little extra, there is no logical reason why the hospital architect should neglect this simple device which adds enjoyment to the existence of the very people for whom the hospital is erected.

SPLITTING OF THE LARYNX FOR THE REMOVAL OF GROWTHS.

BY JOHN K. STERRETT, M. D.,
Pittsburg.

(Prepared for the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

A paper on the above subject to my mind needs no apology, but before going further I wish to state that no statistics shall be given, as the object is only to try and emphasize the importance of splitting the larynx when a growth or foreign body is to be removed. The larynx is so accessible to outside operative work that we wonder why it has not been opened more in the past instead of nibbling away with the help of the laryngoscopic mirror. Judging from the number of instruments, old and new, in the shops it seems a great many laryngologists still pursue the latter method. Any one, and of course this includes all laryngologists, must certainly realize at once the difficulty of working through the mouth, especially when the patient has a sensitive throat, although we may use cocain freely. Then, too, how seldom is all of the growth removed by the old way, if I may so term it?

It has not been long since the middle ear was drained by means of the removal of the ossicles and membrane through the external meatus. Most surgeons have now abandoned this method entirely and enter the tympanic cavity back of the ear. And what a blessing this method has been both to operator and patient. How well the tympanic cavity can be inspected, cleared, and drained, is illustrated by the remark heard by the author of this paper, and made by one of our most distinguished aurists recently. He believed that the middle ear will always be drained in the near future by the postauricular route, even in the acute cases of suppurative otitis media. This does not mean mastoid cases but the ordinary ear inflammations.

This may be extreme, but should not at all surprise us if it came to pass. I mention the ear drainage to illustrate what to my mind are in many ways parallel procedures, in so far as operative ease and thoroughness may be attained in splitting the larynx.

Any one who has seen the larynx laid open and inspected will certainly agree with me as to which is the better method.

The operation itself hardly needs any description, as beside the strict surgical precautions there is not much to be said. However, a brief résumé of the operation will not be out of place.

The operating room should be warm and the air moist and as clean as possible. The patient should be placed in the laryngotomy position and the field of operation prepared. As to anesthetics, cocain may be used although it may be necessary to use ether.

The incision must be made exactly in the median line and of ample length. When the cartilage is reached all bleeding is arrested and then the thyroid cartilage divided, care being taken to do this exactly in the central line to avoid injuring the vocal cords. If bleeding now interferes with the operator a sterile solution of adrenalin should be sprayed into or applied to the larynx by means of a swab. It is also necesssary to use cocain at this point. The cricoid cartilage may be divided if necessary. The operator can now have a full view of his field and go ahead and remove whatever tissues he sees fit. The cartilages are now closed by means of sutures, and skin wound also later.

A word as to the dangers of opening the larynx. Of course we have the same risks to run as when operating through the mouth but they are not so great, as the time consumed and often the amount of bruising and tearing of the tissues is not nearly so much as in the old way.

Probably the greatest danger you may say is pneumonia, but if precautions be taken and the operation done rapidly this danger is small indeed.

Of course the patient must have the same care as one would give a case of laryngotomy or tracheotomy.

This paper, has been very brief, and as before stated is not a paper of research but is intended to bring before this section the importance of considering this method of removing growths from the larynx and the abandoning of operating by the way of the mouth and pharynx. And allow me to say again any one who has opened the larynx will be surprised how different it looks from the laryngoscopic image and with what ease the operator can accomplish his purpose.

RETINAL ASTHENOPIA.

BY JOSEPH E. WILLETTS, M. D.,
Pittsburg.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

Retinal asthenopia is a term which I think is applicable to certain conditions of the visual apparatus in contradistinction to other well-known forms of retinal irritation.

In speaking of retinal asthenopia, I refer to a condition distinct from that form of retinal disturbance classified in books as hyperesthesia, since no part of the symptoms predominating in the latter are apparent in the condition which I will attempt to describe and to which I have applied the term of retinal asthenopia. Retinal hyperesthesia is a condition characterized by a mass of complex, reflex symptoms, brought about by prolonged or constant near work, with errors of refraction uncorrected. The constant endeavor to properly adjust astigmatic, hypermetropic, or muscle differences, results in the straining of accommodation and muscles of convergence, which in many instances produces a permanent spasm of accommodation or vague subjective phenomena.

These subjective symptoms often present themselves as brightly illuminated, white or colored clouds, rings, etc., which cover a large part of the visual field, and move about in it with various changes in shape. Occasionally, the whole visual field appears filled with a wavy or vibrating mist, whose color is generally bluish white. Again, they may appear as flashes, sparks or spheres, which rise up in various portions of the visual field, and quickly cross over it in very different directions. Sometimes they are collected in such a way that they nearly fill the visual field; and it seems to the patient as if he were looking in a thick rain of waving golden, silvery, or fiery drops.

In retinal hyperesthesia, impressions left on the retina, or after-images, appear more readily, reach very great intensity of illumination, and do not so readily disappear, as in the normal condition.

In suddenly changing the direction of the eyes, it easily occurs that, while another object has come under observation, the impression of the former one is still present, and consequently the after-images are mingled with the impression of the objects still in sight; the perceptions become confused, and since the after-images change their positions with the movements of the eyes, an apparent motion is imparted to objects which are really at rest.

If these impressions are of varied and varying form, it amounts to an actual chase after subjective visual appearances, each of which seeks to displace the other and sometimes simply reproduces the object seen, sometimes combines with the object seen several impressions with one another under the form of after-images which represent to the sensorium, very irregular, particolored figures.

These subjective phenomena are not necessarily dependent upon the action of objective light, and are characteristically seen even in complete darkness.

With these symptoms, we have also marked physical signs or symptoms, such as more or less constant headache, burning of the eyes, lacrymation, furrows between the brows, etc. This condition is the result of strain upon the muscles of accommodation and convergence. That these subjective symptoms are due to the morbid excitation of the individual nerve elements of the retina alone, is evident from the fact that the whole train of symptoms disappears immediately and permanently with the proper correction of the error of refraction.

The subjective visual phenomena, exaggerated and grotesque in form, as seen in acute or chronic alcoholism, belong to the sensorium, and have nothing to do with the retina. In retinal hyperesthesia, we have the symptoms prior to the corrections of the error. *In retinal asthenopia the symptoms only become manifest after the error is corrected.*

We all have had myopic patients, who, when refracted, have said, "But Doctor, I see too distinctly with these glasses; is there any danger of their injuring my eyes?" But we seldom hear that statement from a hypermetrope. It was such a statement from a hypermetrope that drew my attention to a condition which I believe will eventually be classed by the neurologist as an early sign, pathognomonic of beginning cerebral neurasthenia.

Patient, widow, aged 52, complained of nothing except that her reading glasses were not as good as they might be. She was wearing bifocals + 1.50, S. over each eye, for distance. + 2.50 S. for reading. Distant vision, with glasses on, was R., 50/100; L., 50/100; close vision, Yeager No. 4.

Retinoscopy with glasses on, showed an uncorrected hypermetropia of + 1.50 S. in each eye. Muscle balance normal, an additional + 1, Spherical, was held over each eye and she read for distance, 20/15 and Yeager No. 1. + 2.75, was then put in the trial frame for distance, which gave her 20/15 vision. She was delighted at first and then took the glasses off, pressed the eyes firmly, saying, "But Doctor, I could never stand seeing so distinctly as that, it would make a wreck of me. I just want my reading glasses changed." I persuaded her to accept both, and wear them constantly as she had the others. At the end of the first day, I was telephoned that it was impossible for her to wear them. She complained of violent headache, said her eyes were swollen, red and watering, I telephoned her to lay her glasses aside for two days, and on the third day put them on in the morning and keep them on until she retired. I was telephoned about three P. M., stating that the symptoms had all disappeared after she took the glasses off, but now were as bad as ever. I told her to keep the glasses on, and I would be over to see her. There were marked photophobia and blepharospasm, the lids reddened and swollen, tears running down the cheeks and she complained of violent headaches. She confided to me at this time, that for several months past she felt a constant numbness in the frontal region, that she doubted her own thought and action, and was under a constant nervous tension in trying to conceal indefinite symptoms which if asked to explain she could not, and which were apparently contradicted by her well nourished and healthy appearance. I enjoined absolute rest in a dark room for five days, with two days additional for the gradual relighting of the room. At the end of that period her distance glasses were changed back to + 1.50 instead of + 2.75, which left her with but 50/100 vision, instead of 20/15, and her reading glasses were made + 3.75. She left shortly afterwards for California, and now says she is a well woman.

Retinal asthenopia is a term which might be applied to a retina, which, as in this instance, is capable of doing its full complement of work, but, when called upon to do so by the proper focusing of rays upon it, it rebels and protests.

The case is unusual, and I believe that we, in our knowledge of the exactness of the laws of refraction, have been content, and disregarded statements of patients, which if followed up would have been identical with this patient.

It seems to me to have been a case of beginning neurasthenia with morbid excitation of the sensorium in which the vague indefinite symptoms (common in this disease) were overcome by the new irritation consequent upon the increased visual acuity, and were converted from indefinite, into the manifest symptoms of photophobia, lacrymation and pain.

THE PRESENT STATUS OF PRELIMINARY IRIDECTOMY AS RELATED TO CATARACT EXTRACTION.

BY WENDELL REBER, M. D.,
Professor of Diseases of the Eye in the Medical Department of Temple College, Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

The operation for cataract is fraught with possibilities so beautiful and at the same time so abysmally awful for the patient, that the method of its performance will ever remain a subject of legitimate discussion among ophthalmic surgeons. So long as there are "many men of many minds," there will be reasonable difference of opinion as to what constitutes the best operation. But, taking full account of the variation in temperament and view point among a large number of operators, it would seem that, where the patient has so much at stake, there would be general agreement to the proposition that that operation is best which insures the greatest safety to the patient.

For a few years past the writer has been inclined to think that the operation of preliminary iridectomy offers the patient the largest chance of success, and because of this conviction he has been pursuing this method whenever feasible. It is because of the frequent opposition from both patients and their family doctors (not to mention a few of his closest ophthalmic friends) that the writer has ventured on a collective investigation that might embody the views of the majority of the prominent American operators, concerning the method of extraction of cataract with preliminary iridectomy. With this end in view, a circular letter was sent to one hundred and sixty American ophthalmic surgeons with an enclosed blank containing the four following questions:—

1. Do you ever do preliminary iridectomy?
2. For what condition?
3. Why?
4. If a cataract patient has lost one eye by operation (or whatever cause) would you do preliminary iridectomy if the patient's other would permit? and if so, why?

To this letter one hundred replies were received, and will be found embodied in this paper.

Etiology. The question as to whether preliminary iridectomy shall be resorted to in cataract extraction, seems to the writer to depend largely upon one's views as to the cause of cataract.

For a long time it has been the contention of many American ophthalmologists (and particularly Philadelphians) that in sedentary persons of gouty, rheumatic or diabetic diathesis or, for that matter, perverted metabolism from whatsoever cause, errors of refraction that had been allowed to go uncorrected up to 50 to 60 years of age were likely to set up low choroidoretinal disease, which sooner or later manifested itself in fine granular opacities in the vitreous humor along with beginning cloudiness at the posterior pole of the lens, and beginning opacification of the lens periphery. Prominent among these is Risley, whose series of cases[1] show unmistakably the relation between the choroidal state and the lenticular disease.

In this day and generation, when there is general agreement as to the operability of most immature cataracts, and when every city and many small towns contain operating ophthalmologists in keen competition with each other, the proportion of classic senile mature cataracts (the "good cataract" of the previous generation of ophthalmic surgeons) to the total number operated, is small compared with what it must have been thirty years ago. So that the proposition has now resolved itself into "How shall we look upon these not wholly matured cataracts."[2] Hess maintains that every opacity in the lens not traumatic or congenital must find its explanation in some reduction of the body nutrition. It is the belief of Schoen[3] that glaucoma and cataract are due, in the majority of cases, to chronic overexcitation of the accommodation. He asserts elsewhere[4] that in astigmatic eyes even of young people which have been overtaxed by working without correcting glasses, one seldom fails to find (by the use of a mydriatic) signs of equatorial cataract. Rourè,[5] from a careful study of corneal astigmatism in thirty-three cases of double cataract, found that in eighty per cent. of the cases the eye first affected with cataract was the most astigmatic eye. Interest attaches also to the observation of Mittendorf[6] that in the general majority of senile cataracts, the opacities appear first in the inner lower quadrant of the lens. He attributes the earliest involvement of this portion of the lens to the constant over accommodation for new objects, requiring at the same time forced convergence and downward rotation of the eyes. Risley's[7] idea is that this region of the lens is the part least protected, and he sees in that fact sufficient reason for the appearance of opacities first in the inner lower quadrant.

Last year Risley[8] laid down the dictum that intraocular conditions should, in large measure, decide which operation is likely to be followed by the best results. For example, if gout, rheumatism, diabetes, or other disorders of metabolism have produced changes in the eye, which in their turn have caused cataract, the posterior capsule and contiguous cortex are apt to be affected in the form of posterior polar cataract (as stated), and in such cases simple extraction is not deemed advisable. In the presence of these conditions, he prefers preliminary iridectomy. It would be interesting to know just how many patients with immature cataract are not the subject of some perversion of metabolism. Most subjects of immature cataracts are fifty-five years of age and over, and the almost invariable association of either gout, rheumatism, chronic constipation, beginning low grade arteriosclerosis, or some other anomaly of metabolism with this period of life, is too well known to need repetition here. Elsching[9] pronounced by De Schweinitz, "the most recent systematic writer on the subject from the ocular standpoint," believes "that many cases of chronic choroidal disease may be due to gastrointestinal intoxication," a low grade phase of which condition seems quite the rule in incipient cataract patients. Unfortunately no one, as yet, has had systematic examination for urea, indican, acetone, urobilin, and conjugate sulphates, made in a large series of persons presenting immature cataracts. Enough has been adduced, however, to indicate that the great majority of cataract patients are not well people, and to show that cataract eyes, far from presenting a purely senile process must in most cases be viewed as sick eyes, belonging to patients whose diathesis is almost sure to influence the healing process. General surgeons are keenly alive to the deleterious influence of rheumatism, gout, diabetes, and syphilis; and we may well emulate their example and study well just how much trauma will probably be borne by an eye, and how it may be performed with the least subsequent inflammatory reaction. For however smooth the operation, should the healing prove complicated the visual result is almost certain to be somewhat prejudiced thereby. This brings us to the question of iridectomy and whether it should or should not be performed.

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[1] Transactions of the Section of Ophthalmology of the American Medical Association, 1891.

[2] *Sammlung zwangloser abhandlungen aus dem Gebiete der Augenheilkunde,* 1896, No. 2.

[3] *Functionskrankheiten des Auges.*

[4] Knapp's *Archives,* XVIII.

[5] *Archives d'Ophthalmologie,* 1895.

[6] Transactions of the American Ophthalmological Society, 1898.

[7] Ibid.

[8] *American Medicine,* February 18, 1905.

The Argument against Iridectomy. Those who are devoted to the simple operation urge against iridectomy, whether combined or preliminary, the following: (1) The cosmetic effect is poorer; (2) it is not only needless but more dangerous because of more traumatism; (3) vision is poorer because of iridectomy; (4) it necessitates a longer operation; (5) there is more dazzling after iridectomy; (6) the vitreous is not so well retained; (7) it is not justifiable to subject the eye twice to the risk of infection. These objections will be considered seriatim.

1. In rebuttal of this objection "as to a poor cosmetic effect," Haab[10] may be quoted, "In old persons owing to the loss of fat in the orbit, the upper lid usually hangs down over, and as a rule covers, the upper half of the cornea, so that one has to raise the eyelid with the finger in old people to find out whether an iridectomy has been performed." Steffan[11] fails to get the view point of those who contend so vigorously for a round pupil. "No patient," he says, "has ever asked me to remove his cataract in such fashion as to leave him with a round pupil. What the patient wants is sight. That is the only thing that concerns him and me too, as a practical oculist."

2. It is a needless and more dangerous operation because of a greater traumatism. In 1897, Knapp, writing in Norris and Oliver's System[12] says, "The eye mutilated by iridectomy, with its frequent contamination of the corneal scar by very small portions of iris and capsule and also inflammatory products, withstands these influences less than the eye after simple extraction. From my own experience, I have long been forced to the conviction which current literature has not shaken, that simple extraction is not only the best but also the safest operation for senile and many other cataracts." Among continental operators who have recorded themselves as against iridectomy are Galezowski, Bravais, and De Wecker.[13]

Devereux Marshall[14] prefers to extract without iridectomy although he admits that the latter method is less likely to be followed by iritis. Drake Brockman[15] believes the 3 mm. flap operation without iridectomy is best—and he says also the safest—basing this statement on a comparative analysis of three series of cases (293 in each series) of the simple, the combined, and the Pagenstecher operation.

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[9] *Klinischer Monatsbericht fur Augenheilkunde*, LIII., 1905.

[10] Atlas of Operative Ophthalmology. American Edition, p. 97.

[11] *Archiv fur Augenheilkunde*, XXXV., No. 2, p. 183.

[12] As regards the operation one would perform on one's own father, no hesitation ought to exist if he is affected with a veritable senile cataract. If he is in such hygienic condition that he can observe the repose for a few days which simple extraction requires it is best to operate with iridectomy. (De Wecker in Landolt's Monograph.)

[13] Vol. III.

[14] *The Ophthalmoscope*, March 1, 1906.

In reply to these arguments we shall again quote from Knapp, writing this time (in 1906) in review of the latest (5th) edition of the De Schweinitz text-book wherein he says, "It is not so essential to spare the iris; small excision is a positive prevention of prolapse—and has no unpleasant consequences." In this connection the writer would like to record his conviction that trauma of the iris whether by iridectomy or bruising of the iris (as a simple extraction) is almost sure to result in a low grade reaction with outpouring of inflammatory exudate. Such changes are not readily seen with the unaided eye. But if a binocular magnifier and oblique illumination be used it will be easy to find fine synechiæ even after iridectomy (combined or preliminary) or fine tears in the iris after a simple extraction.

3. Vision and orientation are poorer because of iridectomy. Until there is more careful statement as to just how long after operation the vision was estimated, this whole question will remain unsettled. For instance, George A. Berry's experience,[16] which has been a large one, leads him to believe that vision is perhaps better after combined than after simple extraction. Schweigger is not so sure. Such continental operators as Eperon, Von Hipple, Argyll Robertson, Manz, Fuchs, Neese, De Vincentiis, Steffan, Swanzy, Sprague, Manolescu, Bagneris, Chodin, Desjardin, Schiess, Dianaux, and Hansen Grut do iridectomy and must therefore feel that the visual result is about equal with or without iridectomy, or they would omit the procedure.

Bauerlein[17] practiced the combined method in 860 cataracts and was entirely satisfied with the visual results. Zenker[18] states that Duke Carl of Bavaria did the combined operation in 995 out of 1000 cases and was similarly pleased with the average visual results. Gayet's well-known showing of equal visual results in 195 combined and 195 simple extractions[19] can be practically paralleled by that of A. Graefe, Fuchs, Haab, Von Hipple, Samelsohn, Schiess, Swanzy, Manz, and others. Ring[20] in comparing the results of the two methods in 2155 cases (1032 combined, 1123 simple) found the average vision 34-100 in the combined series as against 31-100 in the simple series. Finally a review of the facts deducible from the statistics of 11,250 cataract extractions reported and collected by F. M. Wilson,[21] J. B. Storey,[22] D. Webster,[23] J. E. Weeks,[24] O. Hallauer,[25] and W. Ahlbrand,[26] indicates that the choice as to simple and combined operation will be largely according to the caprice of the operator, each surgeon offering statistics which support his own method. So that so far as the visual outcome is concerned the chances seem about the same with or without iridectomy.

4. It necessitates a longer operation. This statement does not hold if preliminary iridectomy is done.

5. There is more dazzling after iridectomy. The overhanging upper lid will cover the iridectomy and shade the eye sufficiently. Steffan, one of the most experienced of continental operators, says: "I have iridectomized downward for years and I can not remember any patient who has complained of dazzling."

6. The vitreous is not so well retained. Drake-Brockman's[27] three series of cases rather support this statement; for in the 293 Pagenstecher (extraction in the capsule with iridectomy) operations there was vitreous escape in 28 per cent.; in 293 combined operations there was vitreous prolapse in 6 per cent.; and in 293 simple operations there was loss of vitreous in 1 per cent. of cases. These are the results secured by an operator of large experience, although the varying results may be due in part to matters of judgment in technic. Mr. Marcus Gunn (of Moorfields

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[15] Ibid.

[16] *British Medical Journal*, September 26, 1896.

[17] *Lancet*. August 11, 1894.

[18] 1000 Cataract Operations, Wiesbaden, 1895.

[19] Landolt's Monograph.

[20] *American Medical Surgery Bulletin*, December 15, 1894.

[21] Transactions of the American Ophthalmological Society, 1896.

[22] Transactions of the Royal Academy of Medicine in Ireland, 1896.

[23] Manhattan Eye and Ear Hospital Reports.

[24] *New York Medical Journal*, LXI.

[25] *Jahresbericht der Augenheilanstalt zu Basel*, 1896.

[26] *Archiv fur Augenheilkunde*, XXXII.

[27] *Ophthalmoscope*, March, 1906.

Hospital) stated not long since to the writer that he saw very little vitreous prolapse and this he attributed to the fact that he always removed the speculum the moment his section was done. The surgeon who does but twenty-five to fifty extractions yearly is confronted with the fact that extraction without iridectomy requires a somewhat larger wound and somewhat greater pressure for expulsion of the lens, both factors that make good for loss of vitreous.

7. It is not justifiable to subject the eye twice to the risk of infection. To this we reply from Knapp:[28] "Loss of an eye by suppuration after iridectomy which thirty years ago occurred once in 250 cases, is now almost unheard of."

The Argument for Extraction with Iridectomy (the combined operation). (1) It does not require as large an incision; (2) capsulotomy is more readily done; (3) delivery of the lens is easier; (4) fewer secondary operations become necessary; (5) iris prolapse is rare; (6) any glaucomic tendencies during the healing are probably forestalled; (7) less confinement to bed; (8) hemorrhage. These arguments, too, had best be considered seriatim.

1. It does not require as large an incision. This is self-evident.

2. Capsulotomy easier of performance. This also is apparent.

3. Delivery of lens easier. This because a way has been opened.

4. Fewer secondary operations necessary. This because of the enlargement of the pupillary area and the greater chance of a small clear portion of posterior capsule being found in the enlarged pupillary area.

5. Iris prolapse is rare. Iris prolapse is the *bete noire* of the advocates of simple extraction. In spite of the beauty of the simple operation Gifford[29] considers the danger of iris prolapse too great to recommend the operation, Haab[30] says: "It is not true that simple cataract extraction without iridectomy is less dangerous and less apt to be followed by wound infection because the traumatism to the eye is less extensive. The simple operation has the disadvantage that if during the night after the operation or even later, the wound suddenly opens, the iris may be washed into the wound by the aqueous humor and prolapse thus induced, causing distortion of the pupil, disfiguring the eye and interfering with the regular progress of recovery. What prolapse may occur with an iridectomized eye is rare and is usually mild in degree, involving generally but one pillar of the coloboma."

Cheney[31] has recently said, "As I continue to operate I find myself more and more inclined to do iridectomy;" and Hansen Grut[32] epitomized the sentiment of ophthalmic surgeons for all time when he said, "The spectre of prolapse haunts the operator continually, while the operation with iridectomy lets him sleep quietly and see that it is right to do it that way."

6. The forestalling of glaucoma by iridectomy. This will be generally conceded without further argument.

7. Less confinement to bed. This of itself is a very weighty argument. If there is one thing that old folks tolerate poorly it is enforced confinement to bed. Indeed, any departure from what has become for them their fixed habits of life, they view with great apprehension. This is even accentuated if they are in strange surroundings; and if they become sufficiently perturbed mentally, it is certain to react badly on the healing process. Too, the dangers of hypostatic conditions in the lungs of such patients must not be overlooked.

The Question of Preliminary Iridectomy. The principal arguments brought forward against preliminary iridectomy are six, and chief among them is the assertion that there is:—

1. Increased risk in opening the eye twice, however minimal that risk may be. One of the surgeons to whom the circular letter was sent and who has done over 400 extractions without preliminary iridectomy, states in his answer: "Opening of the anterior chamber is never to be regarded in the light of a dangerless operation. This procedure multiplies operations and the preparation for operations." In rebuttal of this we may be permitted to again quote Knapp, who has said that infection after iridectomy is practically unheard of in this day of surgical cleanliness. If an iridectomy is done (as it should be done) with a small narrow bent keratome (the Weiss pattern, 5 to 6 mm. at its widest part enjoying the preference) the

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[28] Norris and Oliver System, III.

[29] *American Journal of Ophthalmology*, 1904.

[30] Atlas of Operative Ophthalmology, 1905.

[31] *Boston Medical and Surgical Journal*, April 5, 1906.

[32] *Annali di ottalmologia*, 1892, p. 7.

wound near the limbus need not be more than 6 mm. in length and the two cut surfaces of such an incision are so perfectly coapted that sealing of the wound occurs in a few hours. The same can not be said of the operation done with a Von Graefe knife. If patients are confined to their beds it is but for the rest of the day on which the iridectomy is done.

2. The second disadvantage urged against this procedure is that because of the two incisions in the cornea there is increased astigmatism. So far as our knowledge goes this objection will have to stand as a theoretic one until large comparative data have been collected and shown to support this assertion.

3. The third objection is that when the extraction is done, one must cut through the previous scar left by the iridectomy and that scar tissue heals poorly. The reply to this is that in making the incision for the iridectomy it will fall in a plane about 1 to 2 mm. anterior to the plane of the incision for the extraction.

4. The fourth objection is that "patients stand a first operation with more fortitude and less strain than a second one," and that "with nine out of ten patients, a preliminary iridectomy is a preparation for restiveness and hyperexcitability at the critical stage of the operation." Another correspondent to the circular letter writes: "In 100 cases of preliminary iridectomy I found no apparent difference in the healing from that of the ordinary operation. I have found, however, that all of these patients suffered more or less mental perturbation in regard to the final result." On the other hand, several other correspondents aver that once the patients learn what is expected of them in the final operation they are much more tranquil at that time. In other words, that the preliminary operation is of great value in educating the patient as to his part in the performance.

5. It is urged by many operators that the eventual chances of success are no greater by reason of preliminary iridectomy, and that it therefore becomes a needless mutilation. To this it may be replied that in uncomplicated senile cataract (the so-called good cataract) the chances with preliminary iridectomy are quite as good—and in every other form of cataract some better than in either the combined or the simple operation.

6. Consideration of the patient's time is no small matter. With surgeons in the large cities whose patients reside close at hand, the time element does not loom up as an objection. Such patients enter the hospital for one day, have the iridectomy done, and then go home to return in three to eight weeks for the extraction. But in the smaller cities and outlying districts when the patient travels many miles to have the operation done, the interval of three to eight weeks needed between the two operations ofttimes would constitute an absolute bar to the procedure. The more so as many cataract patients have had drummed into them the idea that the extraction of the cataract is "easier and less dangerous than an operation for corns," as one of Landolt's respondents puts it.

The argument for preliminary iridectomy is summed up by Coleman as follows:—

1. The maturing of an unripe cataract is frequently hastened.

2. The diagnosis of the character and size of the cataract is facilitated.

3. The surgeon learns of the amount of self control possessed by the patient.

4. During the extraction there is no hemorrhage from the iris.

5. The iris does not fall in front of the knife.

6. There is an unobstructed doorway opened for the cystotomy and expulsion of the lens and cortex.

7. There is no pressure trauma of the iris as occurs in the simple operation.

8. The iris has healed leaving only the corneal incision to heal.

9. The operation is shorter and less painful than the combined method.

10. It lessens the danger of iritis; also of glaucoma.

11. It is the operation best suited to complicated cataracts and not unsuited to any.

12. There is less need for subsequent needling operation.

To these we would add:—

13. That the young surgeon by doing the two operations will acquire skill in ocular operations in one half the ordinary time; that is to say, it is in the nature of most excellent training to the surgeon himself without in the least jeopardizing the patient's chances.

14. (This seems to the writer the most important indication of all.) Any latent dyscrasia in the blood is altogether likely to reveal itself during the healing after the iridectomy, and the patient may thus be prepared by suitable treatment for the final operation. Too much stress can not be laid on this factor in cataract extraction. The average ophthalmic surgeon seems vastly more able to extract a cataract skillfully than to treat any subsequent complication in the healing with one half as much skill. Not infrequently victory may be plucked from what might have

been certain defeat by clever nursing and after treatment.

Out of the ninety-four replies received from the circular letter,[33] forty-seven indicated a sentiment in favor of preliminary operation by the following answers:—

G. E. de Schweinitz: 1. Yes. 2. If one eye has been lost by operation—usually if the cataract is unripe. 3. Because other things being equal, the chances of ultimate success are enhanced. 4. Yes, for the reasons stated.

H. F. Hansell: 1. Frequently. 2. (a) Immature double cataract. (b) Complicated cataract with synechiæ. (c) In precocious senile cataract (before fifty years of age). 3. To improve vision and postpone the necessity of extraction; and to facilitate removal of the lens. 4. Yes. Because I believe it is safer.

John E. Weeks: 1. Not frequently. 2. Immature cataract; old arteriosclerotic individuals. 3. To avoid as far as possible too much traumatism at one operation and to avert possible hemorrhage from the deep vessels. 4. I would urge preliminary iridectomy. If the cataract were complicated I might insist on it. The dread of an additional operation on the part of the patient is often sufficient to turn the balance.

G. C. Harlan: 1. Occasionally. 2. Immature cataracts, posterior synechiæ, restless patients, and other complications. 3. Less disturbance from cortex; painless extraction; freedom from prolapse; simpler after treatment. 4. Yes, because I consider it the safest operation.

Peter A. Callan: 1. Yes, when the patient can spare the time. 2. In all cases of cataract where I consider an iridectomy advisable. Likewise I look upon it as an educational measure for the patient—a training for the extraction—especially valuable in immature cataract. 3. It is the safest thing to do. I consider the iridectomy when done immediately after the corneal section the most dangerous part of the operation. 4. I would urge preliminary iridectomy on just such patients. Two operations is a small matter with an unruly patient. If iritis follows the preliminary, valuable indications are secured.

J. A. Lippincott, Pittsburg: 1. In my early practice I did it as a routine measure. 2. Of late years, in all but classic senile cataracts. 3. Edges of the coloboma much more likely to injury in combined extraction. In myopic cataract, cleansing is accomplished much easier after a preliminary. 4. The chances of success would be somewhat better, and so as a rule I advise it.

Lucien Howe, Buffalo: 1. Yes. 2. For optical purposes; in unruly patients in complicated cataracts. 3. Safer. 4. Yes. Much safer.

W. M. Sweet, Philadelphia: 1. Yes. 2. All but classic senile cataracts. 3. Safer. 4. Yes. I think it is the safest thing to do.

Casey A. Wood, Chicago: 1. Frequently. 2. In all but classic senile cataracts. 3. Less danger of iritis, prolapse, and infection. 4. Yes. Safer for reasons just given.

W. H. Wilder, Chicago: 1. Frequently. 2. Always in one eyed people and in complicated cataracts. 3 and 4. Safer, better healing, more accurate operation, cortex more easily removed.

H. V. Würdemann, Milwaukee: 1. Yes, occasionally. 2. In slowly progressing cataracts when patient will consent to two operations. 3. Less traumatism, less postoperative iritis, easier delivery of lens débris. 4. Yes. Two comparatively simple operations produce less trauma with subsequent irritation than the more severe combined operation, or the bruising of the iris that occurs in simple extraction.

Charles Stedman Bull, New York: 1. Yes, frequently. 2. In all but classic senile cataracts in quiet self possessed persons. 3. To simplify the extraction, to avoid infection and iritis, to shorten the final operation, to diminish chances of vitreous escape and intraocular hemorrhage. 4. Yes, for the reasons given.

J. L. Thompson, Indianapolis: 1. Yes, frequently. 2. Everything but classic senile cataract. 3. Time gained in immature cataracts—everything in much better preparation for final extraction, which is a relatively simple matter after preliminary iridectomy. 4. I would not take the patient's time into consideration. I never have and never shall operate on any patient who has but one eye without preliminary iridectomy. I do not tell the patient that it is better that said iridectomy be made, but tell him most plainly that I will do nothing else. The patient is not capable of deciding the matter. I therefore clear my skirts and avoid the sleepless nights I used to have when my patient was going through the inflammation which presages the loss of sight.

C. A. Veasey, Philadelphia: 1. Yes. 2. Because we most likely thus prevent the serious accidents and complications which frequently arise in combined and simple extractions. 3. Less liability to postoperative mischief. 4. Under these circumstances I always do preliminary iridectomy for the reasons given.

W. K. Butler, Washington, D. C.: 1. Yes. 2. When patient has lost other eye by cataract operation. 3. Safer. 4. Yes. Easier extraction and healing better.

W. Franklin Coleman, Chicago: 1. Almost always. 2. In all senile cataracts complicated or uncomplicated. 3. I believe it to be the safest operation. 4. Yes, for reasons given.

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[33] In the circular letter which was sent out, four questions were asked, to wit.: 1. Do you ever do preliminary iridectomy? 2. For what conditions? 3. Why? 4. If a cataract patient has lost one eye by operation (or by whatsoever cause) would you do preliminary iridectomy on the remaining eye, if the patient's time would permit? and if so, why?

Albert Rufus Baker, Cleveland: 1. Yes. 2. In all but classic senile cataracts. 3. I think it safer. If I had a cataract on my own eye, I would have preliminary iridectomy done. 4. Yes, for reasons given.

Frank Allport, Chicago: 1. Yes. 2. For all cataract extractions. 3. Because it is the safest procedure for removal of cataract and is what I would select for a cataract operation on my own eye. 4. Yes, for the reasons stated.

A. A. Hubbell, Buffalo: 1. Yes, frequently. 2. Immature cataracts, and eyes with marginal blepharitis and conjunctivitis which can not be readily controlled (the so-called "dirty" eye of the Germans). 3. Preliminary iridectomy lessens the danger of postoperative iritis. 4. Yes, for reasons given.

Henry Dickson Bruns, New Orleans: 1. Yes, very often. 2. In immature cataracts, nervous patients, and any complication whatsoever. 3. As I open the capsule with my knife, preliminary iridectomy makes that maneuver perfectly easy; less traumatism—cortex more easily removed—less chance for complete closure of the coloboma by postoperative inflammation—better field for subsequent iridectomy if needed. 4. If the patient has but one eye I always insist on the preliminary iridectomy. It trains the patient for the extraction and the knowledge we acquire of the patient is incalculable.

S. B. St. John, Hartford, Conn.: 1. Frequently. 2. In mature and complicated cataracts. 3. To shorten the final operation and prevent operative accidents. 4. By all means. Trains the patient, quiets his fears, and adds to the chances for success.

William Zentmayer, Philadelphia: 1. Yes. 2. In immature and complicated cataracts and unruly subjects. 3. Matures the cataract, shortens the extraction, lessens trauma, and probably averts grave accidents at the extraction. 4. Yes. I believe preliminary iridectomy to be the ideal operation, but not always practicable.

Charles S. Turnbull, Philadelphia: 1. I always do it. 2 and 3. Because absolute antisepsis after a cataract operation is a myth; the patulous tear ducts are a constant menace. We bandage eyes too long, twenty-four hours is usually long enough. 4. If you would give your patient the best chance in the world, do a preliminary iridectomy. I have been often told that to do so is cowardly; be that as it may, I have no right to risk my patients' sight and all it means to them, to say nothing of my own reputation.

S. C. Ayers, Cincinnati: 1. Yes, occasionally. 2. In immature cataracts and nervous subjects. 3. Safer. 4. Yes, safer.

Dunbar Roy, Atlanta, Ga.: 1. Yes. 2. In nervous individuals and immature cataracts. 3. I feel much safer when it is done. If I should be operated upon for cataract, I should want a preliminary iridectomy done. 4. Yes, and would always insist on it.

J. O. Stillson, Indianapolis: 1. Yes, in fully one half my cases. 2. In immature and complicated cataracts. 3. It does away with the risk of hemorrhage after extraction; is a practical guarantee of a good pupil, and most of all trains the patients as to their part in the drama. 4. I most certainly would unless the patient is so unruly that a general anesthetic would become necessary.

Leartus Connor, Detroit: 1. Yes. 2. In all but classic senile cataracts. 3. To lessen all risk. 4. Yes. Safer.

Cassius D. Westcott, Chicago: 1. Yes. 2. In all but plain senile cataracts. 3. Safer. 4. Yes. Because it is what I would want done on my own eye.

E. C. Ellett, Memphis: 1. Yes. 2. In any case in which unusual precautions were necessary. 3. Extraction easier, shorter, and in every way more satisfactory. 4. Yes. I am firmly convinced that the best interests of the patient are served by the operation thus done.

S. G. Dabney, Louisville: 1. Yes. 2. In all immature cataracts. 3. Maturity is hastened. 4. Certainly. The final operation is rendered safer. For the surgeon who does not do a great many operations, it is the wise plan.

F. T. Rogers, Providence, R. I.: 1. Yes. 2. In immature cataracts and unruly subjects. 3. Safest. 4. Yes. It presents all the good points of the Von Graefe operation which has been very successful in my practice.

Lewis H. Taylor, Wilkes-Barre: 1. Yes. 2. In immature and complicated cataracts. 3. To hasten maturity and render operation safer. 4. Yes. I believe it is the safest practice.

Charles W. Kollock, Charleston, S. C.: 1. Occasionally. 2. In all but classic senile cataracts. 3. Chances of success are greater. 4. Yes, safer.

Samuel Theobald, Baltimore, Md.: 1. Yes. 2. Immature and complicated cataracts and unruly subjects. 3. Lessened trauma and safer subsequent extraction. 4. I would be inclined to do so.

Ira J. Dunn, Erie: 1. Yes. 2. Immature and complicated cataracts. 3. Safer. 4. Yes, safer.

William I. Gamble, Chicago, Ill.: 1. Yes. 2. Nervous, unruly patients. 3. Simplifies operation and lessens complications. 4. Yes, safer.

Adolph O. Pfingst, Louisville, Ky.: 1. Yes. 2. In one eyed people, immature and complicated cataracts. 3. Trains the patient, shortens the operation, averts complications. 4. Yes, safer.

Daniel Dennis, Erie: 1. Yes. 2. In immature cataracts and patients with gouty or rheumatic diathesis and unruly subjects. 3. Trains patients, reveals any latent inflammatory tendencies—shortens final extraction. 4. Yes. I think it safer. I never lost an eye with preliminary iridectomy; I have with combined extraction. If I had a cataract in my own eye I should insist on preliminary iridectomy.

J. W. Chamberlin, St. Paul, Minn.: 1. Yes. 2. Immature and complicated cataracts. 3. Reduces danger, renders extraction easier and tells surgeon much of the condition of the interior structures of the eye. 4. Yes, for reasons given.

William R. Murray, Minneapolis, Minn.: 1. Yes. 2. In one eyed people and complicated cataracts. 3. Reduces danger to a minimum. 4. Yes, for reasons given.

B. P. Croft, Greenfield, Mass.: 1. Yes. 2. Removal of majority of cataracts. 3. I think it our best safeguard against all complications. 4. I would. See answer No. 3.

Oscar Wilkinson, Washington, D. C.: 1. Yes. 2. In all one eyed people. 3. Lessens trauma. Patient is trained, operator secures valuable indications for extraction. 4. Yes. See answer No. 3.

Edward Stieren, Pittsburg: 1. Yes. I have done preliminary iridectomy many times. 2. In feeble minded and insane patients, in otherwise unruly patients. In immature and complicated cataracts. 3. Less shock, less danger of postoperative inflammation—unobscured field—cleaner toilet of the wound possible. 4. Yes, I always recommend preliminary iridectomy to my students as the safest method for the beginner.

C. M. Culver, Albany, N. Y.: 1. I operate very little. 2. In all but classic senile cataracts. 3. For the promotion of safety and for instruction as to possible idiosyncrasies. 4. Yes, for reasons stated.

Oscar Dodd, Chicago, Ill.: 1. Yes. 2. In immature and complicated cataracts and one eyed people. 3. Easier operation in every respect. 4. Yes, safer.

Henry W. Ring: 1. Yes. 2. In one eyed people, rarely otherwise. 3. To render extraction easier and safer. 4. Yes, for reasons given.

J. B. Corser, Scranton: 1. Yes. 2. In unripe cataracts and one eyed people. 3. My limited experience makes me believe it safer and surer. 4. Yes.

It is an interesting fact that of the preceding forty-seven surgeons who do iridectomy often as a preliminary operation, forty-three state that they believe it the safest method of approaching cataract when the patient has but one eye. Five of them go so far as to say that were their own eyes to be operated on for cataract they would wish a preliminary iridectomy done. These were F. Allport, Daniel Dennis, Albert Rufus Baker, Dunbar Roy, and Cassius Westcott. During the past summer Mr. Gunn, of Moorfield Hospital, London, said in a personal conversation with the author that in all patients over forty years of age he invariably did preliminary iridectomy, and that it was the operation he would wish done on his own eye. Where there is so much testimony for preliminary iridectomy from those high in authority, it will be worth while to analyze the objection to it that proceeds from equally high authorities. Their main objection seems to be—not that the healing is any different, nor that the astigmatism is greater with it, nor that the visual result is any poorer—but that the eye is more mutilated (although it be done ever so surgically and skillfully), and that the eye is twice subjected to infection. The question of unjustifiable mutilation hardly stands, for if the iridectomy is done with a very narrow bent keratome, the operation is hardly much more than a paracentesis were not a bit of the iris excised, and this is generally done at the extraction anyhow. The question of infection after iridectomy, done as specified before, can not be well sustained, for as Knapp says: "Infection after iridectomy in this day and generation is practically unheard of." What the writer therefore finds it hard to comprehend is why those who commonly do Von Graefe's operation (or any combined operation) do not favor, or at least faithfully try preliminary iridectomy, if fear of infection is their only objection. Of course, if one is devoted to simple extraction they could hardly be expected to tolerate the idea of any iridectomy, preliminary or combined.

To the writer there is one objection raised by Fox, which seems of much weight. It is a fact in medical psychology, well known to most surgeons, that when a patient has once consented to an operation, the sooner it is done after the consent is gained the better; if not, the mental condition that grows out of much pondering and worrying over the matter has no especially good influence on the patient's disposition at the time of operation and on the healing process afterward. So that the lapse of three to eight weeks between the two operations may be a season of great tribulation to the patient. On the other hand, this effect is largely counterbalanced by the fact that many patients having gone through the iridectomy without pain or trouble are thereby encouraged and fortified for the second operation, particularly if they are in the hands of a surgeon who recognizes and reckons with these intangible influences. All things considered. these two arguments seem to fairly well neutralize each other, and the question of advisability of preliminary operation must be decided on other grounds. Let us see what many surgeons do in the presence of complicated cataracts.

The following surgeons resort to preliminary iridectomy when there is the slightest complication, but do not employ it as a routine measure:—

S. D. Risley, Philadelphia: 1. Yes. 2. In that large class of cases that present evidence of prolonged choroidal irritation or disease. 3. It gives some indication as to how the eye will bear further operation; and in choroidal disease I believe it has a positive therapeutical value. 4. No, unless the condition of the eye as suggested indicated it.

Edward Jackson, Denver, Colo.: 1. Yes, in some cases. 2. In nuclear cataract; for extensive posterior synechiæ; and in the presence of a small rigid pupil with uveitis in the other eye. 3. (a) In comparatively young people for optical purposes; (b) In these cases the necessary iridectomy must be a large one and is a serious, difficult operation. Added to the other parts of an ordinary cataract extraction, it materially lessens the chances of success if the iridectomy is not done as a preliminary one; (c) In these cases the probability of serious damage to the eyes by uveitis following extraction is much greater than in the ordinary case. This danger is of overshadowing importance and can be materially diminished by doing iridectomy as a preliminary operation. 4. Not as a routine thing, but for the reasons given.

J. A. White, Richmond, Va.: 1. Occasionally, if patients will agree to the time interval. 2. For synechiæ; rigid iris; for immature cataracts and hypertension. 3. To avoid secondary complicating iritis, which is much more likely to occur if there is any trauma of the iris at the time of extraction; and to practically eliminate prolapse of the iris. 4. Not necessarily. If the eye presented an uncomplicated senile cataract I should do a simple extraction. Under the conditions noted before I would do a preliminary.

A. E. Bulson, Jr., Fort Wayne, Ind.: 1. Occasionally. 2. Immature cataracts and complicated ones. 3. To hasten maturity and avoid operative accidents. 4. It is my practice to adopt the procedures which I think are most likely to give success, whether the eye to be operated on is the only one remaining or not.

Myles Standish, Boston: 1. Yes, occasionally. 2. In unruly subjects, and eyes where I fear infection and vitreous prolapse. 3. Likely to enhance the chances for success in such cases. 4. If the first eye was lost by septic infection I should certainly not do a preliminary iridectomy.

W. B. Marple, New York: 1. Yes, at times. 2. In unruly patients, one eyed people, and infected conjunctivas. 3. It leaves conditions which are more favorable to prompt healing in such cases. 4. Not if the conditions were first class for extraction without preliminary operation. Only in conditions noted before.

Hiram Woods, Baltimore: 1. Occasionally. 2. Slowly progressive nuclear opacity and in old synechiæ. 3. I have a sort of traditional belief that preliminary iridectomy is a safe procedure in all cases where you anticipate trouble. 4. Never have.

Herbert Harlan, Baltimore: 1. Yes. 2. Immature cataracts in comparatively young people. 3. Because it is a little safer. 4. I do not regard the preliminary iridectomy as so much safer as to make it advisable in every case. I have seen at least one case (not my own) where the eye was destroyed as the result of a preliminary iridectomy.

Nelson Black, Milwaukee: 1. Rarely. 2. Immature cataract, increased tension, and posterior synechiæ. 3. Hastens maturity; relieves tension; allows of free passage of lens. 4. Yes, for the reasons given.

Charles J. Kipp, Newark, N. J.: 1. I have done so many times. 2. In complicated cataracts and one eyed people. 3. Because I thought it was safer. 4. Preliminary iridectomy does facilitate the extraction of a cataract, but I have come to the conclusion that it is of no advantage to the patient. (These two statements seem contradictory. Author.)

S. L. Ledbetter, Birmingham, Ala.: 1. Sometimes. 2. Immature cataract; hypertension. 3. For reasons given. 4. If the patient gave evidence of unruliness, or if there were extreme hemorrhage from the iridectomy on the other eye, yes.

W. K. Rogers, Columbus, Ohio: 1. Not often. 2. In immature cataracts, hypertension, rheumatic subjects, and in advanced senility. 3. Reasons given. 4. Only in the presence of the conditions noted before.

Allen Greenwood, Boston: 1. Only seldom. 2. Immature cataracts. 3. To hasten maturation. 4. Only in complicated cases.

T. B. Tiffany, Kansas City: 1. Occasionally. 2. Immature cataracts, hypertension, sluggish pupil. 3. As a safeguard. 4. No, only in the event of complications.

Horace Starkey, Rockford, Ill.: 1. Yes. 2. Immature overripe cataracts, unruly subjects. 3. Safer. 4. Not necessarily. It is a matter of judgment in each case.

Mark D. Stevenson, Akron, Ohio: 1. Yes. 2. Unruly patients. 3. See 2. 4. Only as above noted. There are about so many eyes out of every hundred lost by infection in opening the eyeball. In my own case, I should wish the complete operation done.

L. D. Boose: 1. Yes. 2. Immature and complicated cataracts. 3. Corneal section can be made more accurate after preliminary iridectomy and whole extraction is easier. 4. Only if the cataract was not a classic one.

C. A. Dufour, Washington, D. C.: 1. Occasionally. 2 and 3. To hasten maturity. In all complicated cataracts. Patient can sit up sooner, an important thing in old people. 4. Yes. It enhances the chances of success.

J. F. Klinedinst, York: 1. Only in special cases. 2. Hypertension. 3. To relieve tension. 4. No. An experienced operator should be able to determine the chance of success.

As matters stand up to this point forty-seven ophthalmic surgeons are willing to admit that preliminary iridectomy is the safest procedure for almost all cataracts and nineteen more state that they are favorably disposed toward it in the presence of complications. If these latter nineteen are willing to admit that it is the safest procedure for an eye that is more than ordinarily comprised, it would seem a fair question to ask: "Why is it then not the safest procedure for a so-called uncomplicated cataract, which is in a measure the sign manual of an abnormal eye else the cataract should not develop?" The truth of the matter is there are very few cataracts which are not complicated either with low grade changes in the interior ocular structures, or with perverted metabolism and various diathesis in the patient's general economy, or both. The classic senile, the "good" cataract of Landolt, is a rarity. And were it not for the time element, the writer believes that preliminary iridectomy would become commoner even than it now appears to be. Zentmayer has summed the situation up well in saying: "To my mind, preliminary iridectomy is the ideal operation when practicable."

There remain to be heard from twenty-eight surgeons who find very little, if any, use at all for preliminary iridectomy. Their statement of the case follows.

Herman Knapp, New York: 1. Almost not at all. 2. For badly complicated cataracts. 3. Perhaps the danger is divided. 4. If the remaining eye were healthy I would not. Interference with iris always leaves an inflammatory tendency of the iris and cornea.

L. Webster Fox, Philadelphia: 1. Rarely. 2. Only in glaucomatoid eyes. 3. To retard the progress of the glaucoma until the cataract is mature. 4. I see no reason why this should be done. In one hundred cases of preliminary iridectomy for cataract during the past fifteen years, I have found no apparent difference in the healing process from that of the combined operation. I have found, however, that all of these patients suffered more or less mental perturbation in regard to the final result, and as I could not discover any benefit from the preliminary work, I have abandoned it excepting in those cases complicated with glaucoma.

James Thorington, Philadelphia: 1. Rarely. 2. Immature cataract. 3. For visual purposes only before the extraction. 4. No.

Howard McI. Morton, Minneapolis, Minn.: 1. No. 2. Opening of the anterior chamber is never a dangerous operation and this procedure multiplies operations and all the accompanying preparations for operations. 3. See answer 2. 4. No. In over four hundred extractions I have never done preliminary iridectomy.

Lewis Stricker, Cincinnati, Ohio: 1. No. 2. Those who do artificial ripenings think it a wise step. 3. One ought not to expose an eye twice to dangers of infection and incarceration of iris when all can be accomplished at one operation. 4. No.

Stephen O. Richey, Washington, D. C.: 1. Very seldom. 2. In increased intraocular tension. 3. Reason manifest. 4. No.

Flemming Carrow, Detroit, Mich.: I do not do preliminary iridectomy, that is in a true sense related to the cataract extraction. I do it only to give the patient the most vision possible, while waiting for the cataract to ripen. In other words, I do it for optical purposes only. Under any other circumstances I invariably do the iridectomy at the time of extraction.

H. B. Young, Burlington, Iowa: 1. Very rarely. 2. In badly complicated cataracts. 3. Reasons obvious. 4. No. I am not free from superstition, having lost three eyes in my first hundred operations and these were the only three in which a preliminary iridectomy was done. I make the combined operation only when I can not make the simple and stretch the point somewhat in favor of the simple.

G. C. Savage, Nashville, Tenn.: 1. No. 2. No. 3. No. 4. No.

A. Barkan, San Francisco, Cal.: 1. Practically not at all. 2 and 3. I distinctly favor the simple operation as it is easier to perform and safer. 4. No. Opening the eye twice appears to me objectionable.

W. H. Dudley, Los Angeles, Cal.: 1. No. 2 and 3. I usually do the combined operation as I am unwilling to assume the risk, however small, of two operations. 4. No.

Eugene Smith, Detroit, Mich.: 1. Rarely. 2. Increased tension. 3. Reason obvious. 4. No.

Harry Friedenwald, Baltimore, Md.: 1. Rarely. 2. In badly complicated cataracts. 3. To reduce the danger of iritis. 4. No.

Arthur G. Bennett, Buffalo, N. Y.: 1. In my earlier practice but not in the last ten years. 2. Because I had been taught by Priestly Smith that it was the safest thing to do. 3. I can not satisfy myself that a double traumatism conveys any particular guarantee of success. 4. I would not.

Joseph Willetts, Pittsburg: 1, 2, 3, and 4. No.

M. H. Post, St. Louis, Mo.: 1. Once in twenty-seven years. 2. High myopia. 3. Muddy vitreous. 4. No.

Walter N. Alling, New Haven, Conn.: 1. I have done it twice. 2. For badly complicated cataracts. 3. For reasons obvious. 4. I believe that simple extraction gives my patient the best chance.

Walter Snyder, Toledo, Ohio: 1. No. 2 and 3. No. 4. No. I believe firmly that I would be nearly doubling the risk to the patient. I believe that nearly all trouble proceeds from infection from the lacrymal system.

Edward B. Heckel, Pittsburg: 1. No. 2 and 3. ——. 4. No.

Frederick Bentley, Seattle, Wash.: 1. No. 2 and 3. ——. 4. No.

John Chase, Denver, Colo.: 1. No. 2 and 3. ——. 4. No.

W. C. Bane, Denver, Colo.: 1. No. 2 and 3. ——. 4. No.

George H. Price, Nashville, Tenn.: 1. No. 2 and 3. ——. 4. No.

H. Moulton, Little Rock, Ark.: 1. No. 2 and 3. ——. 4. Only if the remaining eye presented a badly complicated cataract.

E. E. Holt, Portland, Maine: 1. Formerly rarely. 2. Immature cataracts. 3. It was then thought to be the safest way to remove them. 4. I do not think I would. The less traumatism the better, other things being equal.

H. Bert Ellis, Los Angeles, Cal.: 1. No. 2 and 3. ——. 4. Only if the remaining eye presented a badly complicated cataract.

J. W. Park, Harrisburg: 1. No. 2 and 3. No. 4. I would explain the matter to the patient, and if he so desired would do it because the concensus of opinion seems to be that it is the safest, but my results with the usual operation have been quite as good as those of operators who do a preliminary.

Edward Bernstein, Kalamazoo, Mich.: 1. Many years ago, but not in the past twelve years. 2. Immature cataracts. 3. Found it was no special help. 4. I see no reason why it should not be done, but personally I would do a combined operation.

To sum up, a hundred replies were received. Of this number eleven surgeons understood that artificial ripening was the question under discussion and their replies unfortunately could not be used. Of the remaining eighty-three, forty-seven believe that for most cataracts preliminary iridectomy is a safer procedure than combined or simple extraction; nineteen more believe that preliminary iridectomy is the safer thing to do in the presence of complications; and seventeen feel that the chances of success for their patient would be in no wise enhanced, but somewhat jeopardized by preliminary iridectomy.

A few words in conclusion. Naturally the personal equation can never be discarded in such a matter as this. Moreover, as in matters religious, much depends on how and under whom one has been ophthalmologically brought up, and what ideas have early and unconsciously become almost a part of him. And yet the man of science, of all men, ought always to be of open mind and open to conviction. The data herein submitted may be stated to support in considerable measure the argument for preliminary iridectomy, and yet at least one third, if not more, of the ophthalmic profession in this country do not practice it. Whether they will be influenced so to do by the testimony here submitted is hardly likely. The surgeon who has done one hundred extractions has had his ideas crystallized for him by his results, and by them he is apt to be guided in his future work. It is to the beginner in ophthalmic surgery that these arguments are directed and for him we will quote in conclusion Landolt who says:—

A procedure which facilitates not only the diagnosis of cataract but still more the most important parts of the operation on it (cystotomy, expulsion of the lens, clearing up of the anterior chamber), which permits avoidance both of traumatism and prolapse of the iris, the most redoubtable complication of that operation, such a proceeding seems to merit the preference over all other methods. At all events the extraction of cataract is never simpler, easier, nor more durable than when performed on an eye on which an iridectomy has been previously made.

DISCUSSION.

Dr. John E. Weeks, New York: I have listened with great interest to this paper. In making an extraction of cataract I select the form of operation that is for the best interest of the patient. Whatever makes for safety is, in my opinion, what should be done. Some patients will insist on simple extraction, if the eye gives reasonable promise of success, and I do the simple extraction. There are, however, a number of conditions sometimes present that cause me to refuse to perform it.

If the tension of the eye is slightly increased; if the reaction of the iris is not prompt, also if the anterior chamber is shallow, I refuse to perform simple extraction. If the condition of the blood vessels of the eye is bad, if but one eye is present, I refuse to do simple extraction. When the individual is young, there is no history of rheumatism or gout, the iris reacts promptly, the anterior chamber is relatively deep, and the patient insists upon simple extraction, I do it.

Regarding preliminary iridectomy, the objections to it have been very fairly put before us this morning. Some of them, I think, have much weight. One of these is the time the patient has to give to the operative procedure. This is not, ordinarily, of importance; but in some cases it is of much importance. Another objection is the temperament of the patient. Some patients are much disturbed by the anticipation of an operation. In almost all cases, I try to make the period of anticipation as short as possible. If I have an enucleation to make, the patient is informed as short a time beforehand as possible; and so, also, in case of cataract extraction or iridectomy. I think, on the whole, that if the patient is of suitable mind, the preliminary iridectomy is the operation to choose. However, it is not all "plain sailing," there is the drawback of an added chance of infection, it does not always prevent prolapse or incarceration of the iris in the wound, and loss of vitreous may occur. When the iridectomy is performed at the time of the extraction, the danger of prolapse or incarceration of the iris, and of loss of vitreous, is probably slightly greater than after preliminary iridectomy. As to the visual results, there is very little difference whichever of the three operations considered may be employed. The principal bugbear of simple extraction is prolapse of the iris. It is a calamity to the patient, and should be avoided. The statement that excision of a prolapse of the iris leaves the eye in as good a condition as when the combined operation has been done is erroneous. The condition after a prolapse is sometimes very bad indeed.

In closing, I must say that certain cases of cataract indicate simple extraction; certain cases, the combined operation; and quite a large number of cases, preliminary iridectomy.

Dr. L. Webster Fox, Philadelphia: Dr. Reber has contributed a most excellent paper, in which he has shown the views of many of the skilled operators of our country. I have given my views on this subject, so that it will not be necessary for me to repeat them.

There is no doubt that the ideal operation is the simple one, but the remote contingencies are not always what could be wished. In my experience, I have found that a preliminary iridectomy produces more or less mental depression upon the patient, who must, as he knows, submit to a second operation with its doubtful results.

In the simple operation, the mutilation of the iris, caused by the passage of the lens through the pupil, is more or less detrimental to the excreting process that goes on in the ciliary body, or even the iris itself; and this, in time, gives rise to glaucoma, which frequently follows the simple operation. Such conditions as glaucoma, etc., are found in eyes even after the combined operation; but I am sure that the cause can be traced to a general systematic condition, and not to the iridectomy. In regard to the removal of immature cataracts, I am sure this is too frequently done in patients under sixty-five years of age. In patients older than this, where there is complete solidification of the lens, one may take greater risks. In such cases, the delivery of the lens is simple, with or without its capsule. This is a subject that one could discuss for an hour, but time will not permit.

Dr. Edward Stieren, Pittsburg: Preliminary iridectomy is indicated in insane and feeble-minded patients that have had given them a general anesthetic, enabling them to escape disastrous results from after-vomiting, restlessness, etc. The lens can be extracted much more satisfactorily in a subsequent operation in these cases. In patients with asthma or bronchial cough, and those that are restless from nervousness, the preliminary iridectomy is preferred, because these persons stand two short operations far better than the complete and necessarily more prolonged one, and are, I have found, much more tractable when they come to the operating room the second time. The objection mentioned, that of additional risk of infection in twice opening the eyeball, is of small import in this age of asepsis. Personally, I have never seen infection following the operation of iridectomy. If extraction with preliminary iridectomy is the ideal operation, why not do it all the time? In Pittsburg, and, I have no doubt, everywhere else, time is money; and even our old citizens with cataracts do not enjoy the restraint of hospital life, nor procrastination in getting rid of their cataracts. They like to have it over with; and many are so tractable and free from pulmonary complications that a finished operation, either with or without iridectomy, as the case demands, is performed.

Dr. Howard F. Hansell, Philadelphia: We can discuss the methods of cataract operations forever, just as we can discuss eyestrain. If we were deprived of these two subjects of discussion, ophthalmological societies would not meet so often. The choice seems to me to be an individual matter. I can not formulate a rule as to what I am going to do in certain cases, but must leave the choice of method to the individual case. I do not see how rules can be formulated. There are ideal operations, if the conditions are ideal. I like to do a simple extraction when everything is exactly right for it, and a preliminary iridectomy when a man has only one eye. In the latter case, I should prefer to take the chance of two operations, rather than perform either the simple or combined extraction. An operator of experience can judge, at the time of the examination only, the procedure that recommends itself to him for that individual case.

Dr. Edward B. Heckel, Pittsburg: I think that the psychological side of this question has been omitted. We pay too little attention to this. It is our duty to be explicit about all the details that accompany a cataract extraction,—the period the patient must remain in the hospital, the preparation, how long the operation will take, the fact that there will be no pain, the diet, and how long he must stay in the hospital afterward. Then the patient knows what to expect. It is my practice to tell patients that they must remain in the hospital two weeks; but frequently, if they have friends in the city, I permit them to leave short of that period. If a patient is told that he will have to remain two weeks, and he gets out sooner, he is pleased; but if he is told a week or ten days and is kept two weeks, he is displeased. It is better, therefore, to mention the longest period. All these elements enter into the question very much, but the oculist must make up his mind what course to follow in the individual case.

Dr. Joseph E. Willetts, Pittsburg: I think that any one that goes to the trouble of tabulating a vote of opinion on any subject in ophthalmology is entitled to the appreciation of every oculist in the country; but in this instance, with all due respect to Dr. Reber, I regret it. I regret it for the reason that every practitioner and every embryonic ophthalmologist in the state that reads his article will accept it as a vote of disapproval of simple extraction as an unsafe operation, which is not true, and which I do not believe is the idea Dr. Reber wishes to convey.

In speaking of simple extractions, is it then to be taken for granted that this operation is confined to uncomplicated senile cataract? Has anyone ever suggested, much less advised, it in cases with any complication? Then why, in discussing simple extraction, invariably bring in the other operation, which is a distinctly different type, adapted to totally different conditions?

Referring to preliminary iridectomy, is it done to prevent prolapse? If so, why remove one sixth of a perfectly normal iris, when we know that a very small iridectomy is just as effective in preventing prolapse? Personally, I can not take exception to Dr. Knapp's word "mutilation"; for no other word could be substituted, unless it be the word sacrifice. I can not believe that an operation that unnecessarily subjects the eye to two traumatisms and the patient to double inconvenience and risk, and demands the unnecessary sacrifice of a normal iris, is a logical, much less a good, operation.

Dr. Samuel D. Risley, Philadelphia: I am much pleased with the catalogue of symptoms justifying simple extraction given by Dr. Weeks, as it exactly agrees with my own views of what may be called external or objective symptoms that enable one to select with some certainty the eyes in which the operation for simple extraction is to be chosen. A fully ripe cataract in an eye with a mobile pupil, that is to say a pupil which dilates widely under the use of a mydriatic, does not as a rule belong to an eye with any serious uveal complications. When there is a serious complication in the uveal tract, the iris does not dilate widely, and furthermore does not bear traumatism well. The attempt to deliver a large lens through a stiff, unyielding iris is almost inevitably productive of a traumatic iritis, with subsequent gluing of the iris to the capsule. Wherever a pupil does not dilate widely under a mydriatic, simple extraction should therefore not be attempted. When the ideal conditions exist, however, simple extraction is the ideal operation; and I should do it, even when there is only one eye. One claim made in my paper, from which Dr. Reber has quoted, has been generally overlooked. I have repeatedly urged that preliminary iridectomy is desirable, not only for the reasons given by Dr. Reber, but also, I believe, on account of its therapeutic value in eyes with chronic uveal disease. There is doubtless some force in the arguments used against double operations; but in eyes with uveal complications, preliminary iridectomy is uniformly valuable and is very rarely followed by any reaction. In this group of cases, I am unalterably wedded to preliminary iridectomy, but not in healthy eyes with widely dilating pupils.

Dr. Reber, closing: I am much gratified by this discussion. I do not, however, wish to be dogmatic. I take no positive stand at all. The various opinions make interesting reading for all of us. I grew intensely interested while writing the paper, owing to the multiplicity of ideas. I am still seeking for the safest operation; and if the paper is later read in that spirit, I shall be quite satisfied. If we could only agree upon what a good, uncomplicated cataract is, we should all select the same operation; but this seems, as yet, impossible. Those that are impelled by the passion for perfection will desire to do a simple operation.

One of the greatest advantages of preliminary iridectomy is that one learns the healing temper of the eye; and if there is any one thing that is variable, it is that. An eye that one imagines will heal without complications often gives endless trouble; while a dirty eye will sometimes heal up in ten days or two weeks. This information can be gained by performing preliminary iridectomy.

As to the time limit, it seems to me justifiable to tell patients they will have to wait from three to six weeks, and then do the second operation in three weeks. By thus anticipating the patients' expectations, much needless nervous apprehension is done away with. Only one day of stay in the hospital is, to my knowledge, the general rule after preliminary iridectomy in the Jefferson, Polyclinic, and Samaritan hospitals.

As to the vitreous escape and prolapse, I would say that I shall pass around a little glass capsule on a handle, which I have devised and used in two such cases. One can see through it, and thus better control the condition of the eye against the occurrence of this calamity.

The whole of my paper turns upon the question, What operation shall be undertaken in patients with but one eye? If you do a certain operation in one-eyed persons, why not do it in those with both eyes?

LATENT DIPHTHERIA, A PUBLIC HEALTH PROBLEM.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

CAUSES OF DIPHTHERIA PREVALENCE.

From the public health view point, diseases are studied in order to prevent their spread. Effective prophylactic measures, based on scientific observations, have caused some infectious diseases to disappear from civilized communities, while others have become comparatively rare. Yet, despite the ever-increasing knowledge as to its bacteriology and methods of propagation, diphtheria still remains a fairly common affection. Why is this?

One reason is that only the well-marked cases are isolated and placarded, while persons suffering from the milder forms of diphtheria are permitted to walk the streets, attend school and frequent public places. Another unguarded avenue of contagion is kept open through the false sense of security given by the rules now in vogue as to disinfection. Fomites, which, as shown by Chapin, Hill, Weichard and Welch, only rarely contain the germs, are required to be disinfected, while no attention is paid to the virulent bacilli which so frequently are present and persist for long periods in the noses or throats of persons with whom the patient has been in just as intimate contact. The fault lies partly with physicians who do not recognize the latent forms of diphtheria and partly with sanitary officers who fail to seek out and guard as sources of infection all those who are liable to transmit the disease.

THE AUTHOR'S CASES OF LATENT DIPHTHERIA.

I have seen twenty-seven cases of latent diphtheria, most of them in my capacity as assistant medical inspector of the Philadelphia Bureau of Health. I regard as diphtheria any pathologic condition, local or general, due to infection by specific diphtheria organisms, as defined by Williams, and apply the term latent to those forms unassociated with pseudomembrane.

Case 1. J. S., a schoolgirl of about 12 years, presented enlarged and reddened tonsils on April 29, 1904, and was excluded from school for tonsillitis. A culture taken at the time and one taken later both contained diphtheria bacilli. The girl was not sick at any time.

Case 2. N. McI., a girl of about 15 years, had been undergoing treatment by her family physician for chronic sore throat. She complained of pain in the throat and a general feeling of soreness in the body while at school, May 12, 1904, and on examination her tonsils were found to be red and swollen. She was excluded from school for "rheumatic sore throat." A culture showed the presence of diphtheria germs. Despite active treatment by means of disinfectant sprays, swabbings and gargles, the diphtheria bacilli persisted in the throat until May 23. The girl felt perfectly well generally, the day after she was sent home, but on May 20 the throat was still sore.

Case 3. W. L. had a reddened throat and seemed to have fever in school on May 7. Bacteriologic examination was positive. In a day or two the throat was normal. The boy was never sick. Yet the diphtheria bacilli persisted for five days.

Case 4. G. W., boy, aged about 15 years, on May 9, at school, presented a reddened throat, a culture from which proved positive. The boy felt perfectly well and the next day his throat was normal in appearance. The bacilli nevertheless persisted for five days.

Case 5. C. R., a boy of about 8 years, was excluded from school for tonsillitis, his tonsils being reddened and swollen. He returned in a week with the throat condition unchanged and was again excluded. He had been without medical treatment. On May 12 he returned without showing improvement, and a culture was taken which proved positive. The child was not sick, but looked unhappy.

Case 6. F. C., a little child in a home for colored cripples, had been exposed to true diphtheria on May 15; her fauces were reddened and contained diphtheria bacilli. Her throat did not feel sore. It was examined on several occasions and never gave any evidence of diphtheria. The child was well and playing around. She was given no antitoxin.

Case 7. S. S., a child in the same home, was exposed to the same contagion. Her throat, though practically negative when examined on May 17, contained diphtheria bacilli. The child's pulse was rapid. There was no other sign of diphtheria.

Case 8. J. A., another child exposed to diphtheria in the same home, was given an immunizing dose of 500 units of antitoxin, although her throat on May 15, gave a negative culture. On May 22 she complained of her throat feeling sore, and though on inspection the throat looked clear, a culture proved positive. The child was well and about.

Case 9. O. P., a little colored boy, day after day, at school, would complain of headache, which, he said, had persisted since an attack of tonsillitis three weeks before. Nothing wrong could be found on several examinations. Finally, on May 23, a culture of the throat was taken which showed the presence of diphtheria bacilli.

Case 10. E. O. N., living in the house where her brother was sick with true clinical diphtheria, developed a mild sore throat which gave a positive culture. The child was not very ill and did not require antitoxin. There was no membrane in the throat.

Case 11. M. M., a girl of about 8 years, complained at school for several days of headache, nausea and sore throat. When examined on May 27, the throat contained diphtheria bacilli, which persisted until June 20. There was no pseudomembrane in the throat at any time.

Case 12. M. P., a girl, lived in an orphanage in which four cases of diphtheria had occurred in two weeks, despite the fact that as soon as discovered each patient was removed to the Municipal Hospital for Contagious Diseases, and the orphanage was disinfected. The medical inspector heard of seven children with tonsillitis having been isolated for several days in the infirmary and promptly took cultures of their throats on May 25. This child was one of four who gave positive cultures. Her throat was perfectly clear at the time.

Case 13. J. L., a boy isolated for tonsillitis at the same orphanage, when examined, had a clear throat, which, nevertheless, contained diphtheria bacilli.

Case 14. R. S., a boy, also isolated for tonsillitis in the same way, gave a positive culture, although his throat was clear at the time.

Case 15. A. H., a boy, was the fourth of those isolated for tonsillitis who were suffering from latent diphtheria. His throat also was clear when examined.

Case 16. F. B., a boy of about 8, was told by his mother to consult the medical inspector at school to find out the cause of his having "kernels" in his neck. She said he was subject to them. On examination the tonsils were seen to be very large, but there was no sign of a deposit. The boy had not been ill at all. He was excluded for "tonsillitis," and a culture was taken on June 2 that proved positive. A culture four days later was negative. At the time of the first examination on May 2, and for two days following, the child's four-year-old brother, E. B., suffered from stiff neck. A culture of his throat was taken on June 7. Although no abnormal appearance was noted the culture was positive, and when the child (E. B.) was seen two days later he was sick that day (June 9) for the first time. A typical diphtheritic membrane covered the back part of the tonsils.

Case 17. H. H., a boy of about 10 years, complained June 3, while at school, of headache, belly ache, nausea, and vomiting. His throat was slightly inflamed. Otherwise the child was apparently well. A culture which was taken proved positive. Although the symptoms complained of had disappeared by the next day, the diphtheria bacilli persisted for more than a week.

Case 18. L. A., a girl of about 11 years of age, was sent from home the moment her brother was taken sick with undoubted clinical diphtheria, but she continued to attend school. Twelve days later her throat was examined and the tonsils were seen to be enlarged and reddened, but no patch was anywhere visible. The child complained of no subjective symptoms; her throat did not feel sore nor did she experience pain in deglutition. A culture taken on Sept. 19, 1904, contained diphtheria bacilli. On October 5 the tonsils were greatly enlarged and reddened and still gave a positive culture. The diphtheria bacilli did not disappear until October 11, on which day the tonsils were still reddened and were greatly enlarged, almost meeting in the median line. This was six days after the child sick with clinical diphtheria had given a negative culture.

Case 19. J. R., a girl of about 8 years, was absent from school for ten days with sore throat, but received no medical attention. She returned to school, November 21, and remained in school until November 23. Her two sisters were stricken with true clinical diphtheria on November 22. The child at that time appeared perfectly well.

Case 20. E. G., a boy of about 11, was in the same room on November 22, with the sister of the patient in Case 19, who developed true clinical diphtheria that same day. The boy (E. G.) had always had hypertrophied tonsils and was subject to frequent attacks of tonsillitis, which was almost constant during the fall, winter and spring. He had been no worse during the past few weeks than previous to that time. His tonsils were enlarged, shiny and reddened on November 28, and contained diphtheria bacilli which persisted for five days.

Case 21. J. M., a girl, was sent on December 13 to the medical inspector in school on account of a swelling in the neck. The tonsils were reddened and enlarged and were prominent externally. There were no white spots and no other symptoms. The child had had pain in her ear, etc., a week previously. The throat gave a positive culture, but two days later the culture was negative.

Case 22. J. B., a boy, in school, December 7, had a sore and reddened throat, which gave a positive culture. A week later a culture of his throat proved negative.

Case 23. F. S. was referred to the medical inspector at school on account of otorrhea. A routine experimental culture was taken which proved positive. When the child was seen a few days later on Jan. 9, 1905, there was no sign of diphtheria and the throat gave a negative culture.

Case 24. W. G. M. complained in school on January 20 of a headache and presented a mild pharyngitis. A culture taken from his throat contained diphtheria bacilli, which persisted until February 8.

Case 25. M. S., a girl, had tonsillitis in school on February 8 and her throat gave a positive culture. Her physician said that he found no tonsillitis, but on February 10 the medical inspector, when taking a culture that proved negative, noted that a mild degree of tonsillitis was still present.

Case 26. J. S., a girl, complained of headache in school on February 10. She felt ill but did not suffer pain on swallowing. There was slight reddening and swelling of the tonsils but no white patches were visible. A culture showed the presence of diphtheria bacilli in the throat. A couple of weeks previously an aunt had had a white spot on her throat which received no treatment. On February 13, the girl still felt ill. Her throat was slightly inflamed and ulcers were present on the inside of her lower lip. Cultures from both the throat and the ulcers were negative.

Case 27. L. C., a little girl, developed dysphagia on June 29, 1905, the tonsils being enlarged but not reddened. The temperature was 101 degrees F., and remained elevated for two weeks. The pulse averaged about 116. On July 7, the tonsils were still swollen and the crypts were filled with secretion. The urine at that time contained a minute trace of albumin but no casts. Breathing became very noisy, but after an application of adrenalin solution was much easier. The child was put on a gargle of 1-500 formaldehyd solution and silver nitrate, 60 grains to the ounce, was rubbed on the throat. The breath was foul. On July 10 the crypts were still filled with white secretion and a positive culture was obtained. The next day the tonsils were still swollen, but no membrane or secretion could be seen. The following day the throat was clear. The second negative successive culture was taken on July 16.

It is only fair to state that the bacteriologic laboratory that reported these cultures as showing the presence of diphtheria bacilli regards all bacteria morphologically indistinguishable from typical diphtheria as true Klebs-Loeffler organisms and takes no account of the so-called pseudodiphtheria bacillus or Hoffman bacillus. Consequently, a question as to the identity of the bacilli found may be raised by those who believe that the two organisms belong to different species. Such persons need regard as suffering from latent diphtheria only those patients who either were in contact with patients suffering from true membranous diphtheria or who themselves appeared to give rise to cases of membranous diphtheria. This will include cases 6, 7, 8, 10, 12, 13, 14, 15, 16, 18, 19, 20 and 27. The other cases 1, 2, 3, 4, 5, 9, 11, 17, 21, 22, 23, 24, 25 and 26 may be regarded as conditions of sore throat caused by diphtheria-like bacilli, although it is my opinion that the greater number, if not all, of these organisms were true diphtheria bacilli.

BACTERIOLOGIST'S EXPLANATION OF LATENCY IN DIPHTHERIA.

The great variations observed in the clinical manifestations of diphtheria are explained by Abbott, Wesbrook and other bacteriologists as due to variations in the virulence of the bacillus and in the susceptibility of the individual; not so much to the bacilli as to the soil on which they grow.

One of the principal factors in the mechanism of individual immunity was believed by Behring and Schanz and proved by the researches of Neisser, Orlowsky, Fischl and Wunscheim, and Wasserman to be the presence in the blood of sufficient antitoxin, a condition which is possibly congenital.

LATENT DIPHTHERIA AS SEEN BY OTHER OBSERVERS.

The majority of physicians, according to Chapin, are skeptical about the diagnosis when they see diphtheria without exudation and the patient not confined to bed. Mild atypical cases, however, are extremely common. Years before the discovery of the Klebs-Loeffler organism J. Solis-Cohen, MacKenzie, Jacobi and others called attention to the occurrence of diphtheria without local deposit. More recently Abbott, Chapin, Cobbett, S. Solis-Cohen and Eshner, Fussell, Koplik, McFarland and Babcock, Morse, Park, Rupp, Thorne, Wesbrook, and hosts of others have confirmed these earlier observations. A graphic description of latent diphtheria and of its danger to the public health was written by Jacobi in 1884:—

> The symptoms are often but few. A little muscular pain and difficult deglutition are, perhaps, all that is complained of. Women will quietly bear it; men will go about their business. . . . There is as much diphtheria out of bed as in bed; nearly as much out of doors as in doors. Many a mild case is walking the streets for weeks without caring or thinking that some of his victims have been wept over before he was quite well himself. . . . Diphtheria is contagious. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases.

The picture, however, is not always the same. The clinical features presented by nineteen cases from which Biggs obtained virulent cultures were those of typical acute follicular tonsillitis or of simple acute pharyngitis. In Koplik's cases there was little or no constitutional disturbance. In some of the patients the fauces showed a general hyperemia with enlargement of the tonsils, which became still more prominent when the patient gagged, revealing the enlarged open lacunæ. In a number of instances the lacunæ contained fibrinous plugs in which virulent Klebs-Loeffler bacilli were found. A similar condition, but without visible hyperemia around the plug, is described by Charsley. Park describes a group of cases in which the mucous membrane is only slightly swollen and hyperemic. Cobbett found diphtheria bacilli in cases of slight sore throat. In the latent forms mentioned by Williams, which are unaccompanied by obvious illness, a nasal catarrh, increased pulse-frequency, an irritable heart, a redness of the fauces, or slight tonsillitis may severally be the only symptoms.

IMPORTANCE OF LATENT DIPHTHERIA FROM THE PUBLIC HEALTH STANDPOINT.

From the public health standpoint these mild cases of diphtheria are extremely important. Crowly, Lesieur, Thorne, Wesbrook, Wilson and McDaniel, McFarland and Babcock, Morse, Park and others have called attention to the fact that persons with very slight sore throat, due nevertheless to the Klebs-Loeffler bacillus, may infect others with a severe form of diphtheria. Indeed, Cobbett and Packard believe that from the hygienic standpoint the mild cases are more responsible for spreading the disease than are the notified cases, because no precautions are usually taken in regard to them.

The part played by these unrecognized cases in the production of diphtheria epidemics has been shown by many observers. Several outbreaks of diphtheria in hospitals and schools have also been attributed to latent cases.

THE CONTROL OF LATENT DIPHTHERIA BY THE HEALTH AUTHORITIES.

The cases cited from my personal experience and those reported by other observers prove that diphtheria may occur in a latent form which is just as contagious as are the more marked cases with membrane, and consequently more dangerous to the public health.

The duty of the sanitary authorities to protect the public from patients with diphtheria applies to mild as well as to severe cases. There are few arguments for municipal control of well-marked cases that do not apply with equal force to the latent forms. The danger to the community of a diphtheria patient does not depend on the severity of the infection, but on his liability to transmit the disease.

I believe, therefore, that the health authorities should insist on strict isolation of latent cases of diphtheria. The suggestion of Park that the attending physicians themselves determine whether cases without characteristic symptoms be treated as diphtheria or not does not seem to me practicable or fair, owing to the great differences of opinion that exist among physicians as to the infectivity of such cases.

When a patient with typical membranous diphtheria is isolated at home, a placard announcing the presence of the disease should, of course, be posted at each entrance. In latent cases, however, this placard might be omitted, provided strict isolation is maintained to the satisfaction of the health authorities.

BACTERIOLOGIC TESTS REQUIRED FOR REMOVAL FROM ISOLATION.

If the isolation of either severe or mild cases of diphtheria is to be of practical value in preventing the spread of the disease, it must continue until the specific bacilli have permanently disappeared from the throat. The danger that an individual may be a focus of infection remains as long as he carries the germs about. The great variation in the persistence of these organisms makes the adoption of a time limit from the disappearance of the membrane, as practiced in Providence, ineffective in typical cases and impossible in latent forms. Although in most instances the bacilli disappear after from twenty-eight to thirty-six days, they have been known to persist for 82, 99, 154 and 167 days, for 10 months and even for several years.

The only method of discovering whether or not the organisms have disappeared from the throat is by taking cultures. One culture alone, however, as shown by Graham-Smith and Wells, has not been found a sufficiently reliable index as to their complete disappearance.

As a result of their experiences Cobbett and Graham-Smith advise a minimum of three successive negative cultures before release from isolation. The health authorities of Philadelphia, Boston and many other cities, however, require but two. This seems a good working rule. I recommend, therefore, that in all cases of diphtheria, whether severe or latent, isolation should be maintained until two successive negative cultures shall have been obtained from the patient's throat.

MEASURES INSURING THE RECOGNITION OF LATENT DIPHTHERIA.

The control of known latent cases of diphtheria by the sanitary authorities, however, will not of itself sufficiently protect the public health. Quite as important is the recognition of the latent forms. These, it has been shown, are usually mistaken for cases of tonsillitis and pharyngitis, from which they can be differentiated only by means of cultural tests. Tonsillitis and pharyngitis should be included, therefore, among the diseases to be reported or "notified." When so reported, the physician should be requested to take a culture of the throat and should be offered the services of the health department in case he does not desire to take the culture himself. Biggs believes that observations made by him, by the New York Health Department laboratories, and by Koplik and others are sufficiently conclusive in showing that when diphtheria bacilli typical in appearance are found in cultures obtained from cases of simple angina (cases in which there is no membrane) animal tests in a large majority of instances prove that the bacilli are fully virulent. Park and Beebe, and Wesbrook, Wilson and McDaniel, also declare it justifiable in such cases to assume that the bacilli are virulent and hence dangerous. On the finding of diphtheria-like bacilli in a case of tonsillitis or pharyngitis that case should be regarded as one of latent diphtheria and managed accordingly, unless the bacilli be shown by inoculation into guinea-pigs not to be virulent. The municipal laboratory should, however, be prepared to make tests for virulence when so requested by the attending physician.

In schools that are visited by a medical inspector much latent diphtheria would be discovered and removed as a source of contagion by enforcing the following regulations:—

A child in school with sore throat should be sent to the medical inspector, who should take a culture from his throat and then exclude the child. If the culture is reported negative, the child may be readmitted as soon as the throat is clear. But if bacteriologic examination discloses the presence of diphtheria-like organisms, the case should be regarded as one of diphtheria, unless inoculation tests show the bacilli to be nonvirulent.

A child who has been absent from school on account of sore throat should not be permitted to return until a culture of the throat has been taken. When this has been neglected by the attending physician, it must be done by the medical inspector. If this first culture is negative, the child may at once resume attendance. If, however, it proves positive, the exclusion must be maintained until two successive negative cultures have been obtained. A similar regulation is now in force in London during diphtheria epidemics. The London County Council has recently adopted a recommendation from the education committee to the effect that, during the presence of diphtheria in any district, the committee should be authorized to refuse to admit to school children excluded on account of sore throat until they have obtained a medical certificate of freedom from infection based on bacteriologic examination. Such action, however, seems to me just as important between epidemics as during them, for the reports of Thorne and other English medical officers show that antecedently and subsequently to outbreaks of diphtheria sore throat is very common, serving as the connecting link between diphtheria epidemics.

TERMINAL DISINFECTION.

Not only must latent forms of diphtheria be discovered and be subjected to municipal control, but in order to check the dissemination of diphtheria all the known avenues of contagion must be cut off whenever the disease appears, whether in severe or latent form.

The most commonly employed prophylactic measure in addition to isolation is terminal disinfection. As Chapin, Gorham and others have shown, however, fomites are of relatively minor importance as carriers of infection, and the evidence for the necessity of surface disinfection after diphtheria is very slight. Still, inasmuch as the presence of diphtheria bacilli has been demonstrated by Hill, Gorham and others in a small percentage of infected objects, I think it wise to disinfect, with their contents, all rooms that have been occupied by a patient suffering from either severe or latent diphtheria. It should nevertheless be realized that this alone will have little effect in preventing the spread of the disease, if no precautions are taken to prevent healthy persons with virulent bacilli on their mucous membranes from mingling with other people. Consequently, I believe that terminal disinfection should be postponed until all the members of the household have been shown by bacteriologic examination to be free from diphtheria bacilli.

THE CONTROL OF PERSONS RESIDING IN THE SAME HOUSE WITH A DIPHTHERIA PATIENT.

A difficult problem confronting the health authorities in their endeavors to limit the spread of the disease is the control of those who are in more or less intimate contact with the patient. The measures recommended by writers on hygiene and sanitation and those practiced by the boards of health in this connection seem, as a rule, to be based on the supposition that such persons carry the germs on their clothing and on the exposed skin surfaces. Thus, in some cities those living in an infected house are prevented from attending school or working at certain occupations, but they may resume their accustomed duties on residing elsewhere, provided they have taken a disinfectant bath and have had their clothing disinfected. Whoever comes in intimate contact with the patient is advised, while in the sick room, to wear a gown reaching from the neck to the floor and a cap covering the hair, and on leaving the room to disinfect the face and hands. In neither case is any attempt made to determine the presence or absence of diphtheria bacilli on the mucous membranes of those persons. Yet it is well known that healthy persons who have been in contact with diphtheria may carry the germs on their mucous membranes without becoming sick themselves, though they are capable of transmitting the disease to others. Such persons are known as "carrier" cases and "infected contacts." The germ-laden throats of the infected "contacts" constitute a far greater source of danger than do their garments. Persons residing in an infected house should be prohibited from attending school or from working at any employment in which they are brought in contact with other people or with articles of food, wearing apparel and the like, and from frequenting public places. But those restrictions should not be removed until bacteriologic examination has shown the absence of diphtheria bacilli on their mucous membranes. Yet whenever isolation is effectively maintained to the satisfaction of the health authorities I believe that the restrictions might be suspended in the case of those whose throats are shown by cultural tests to be free from the Klebs-Loeffler organism and remain free when examined at frequent stated intervals.

The method employed in Bristol, England, for finding out which of the inmates of an infected house are harboring diphtheria organisms is an excellent one. As soon as a case of diphtheria is reported or "notified" the physician in charge is requested to obtain cultures from the throats of all the inmates of the house and is offered the services of the Health Bureau for that purpose.

I recommend the adoption of such a rule.

The measures I have advocated are stricter than those usually suggested. Welch, Park and Beebe and the Philadelphia Bureau of Health, however, regard members of an infected house as a source of more or less danger and impose certain restrictions, but Cobbett, Graham-Smith and the Massachusetts Association of Boards of Health object to causing any hardship to breadwinners.

That municipal control of infected "contacts" residing in an infected house is not, as objectors urge, impracticable, is proved by the fact of its effective operation in many cities. The Bureau of Health of Philadelphia for instance, excludes from work all inmates of houses in which diphtheria exists who are employed in the manufacture or sale of clothing, house furnishings or foodstuffs, whether breadwinners or not, and does not permit them to return to work until after the house has been disinfected and the placard removed, unless they change their places of residence and submit to other specified regulations for safeguarding the public health.

In institutions, such as orphanages and insane asylums, strict rules can and must be enforced in order to prevent an epidemic. Whenever a case of diphtheria, even of a latent form, occurs in an institution, cultures should be taken of the throats of all inmates, officers and employés, and all those giving positive cultures should be isolated until two negative cultures have been obtained successively.

THE CONTROL OF INFECTED "CONTACTS" OR "CARRIER" CASES NOT RESIDING IN AN INFECTED HOUSE.

It is recognized by all that many perfectly healthy individuals with normal throats harbor diphtheria bacilli, a still larger number are said to harbor the so-called pseudodiphtheria bacilli. Consequently the control of "carrier" cases in which the infected individuals do not reside in an infected house presents many practical difficulties. The opinions of sanitarians differ greatly not only as to the character of the municipal supervision required for such cases, but as to whether or not any control at all is desirable. This lack of unity is a consequence of the divergent views held by bacteriologists concerning the so-called pseudodiphtheria bacilli.

This scientific world may be divided into two principal groups: First, the French school of bacteriologists and a few Americans, Englishmen and Germans insist that all these organisms are true Klebs-Loeffler bacilli. They discard the term pseudodiphtheria bacilli, believing that the organisms so-called are merely varieties of, or attenuated, or modified, diphtheria bacilli. Second, practically the whole German school, on the other hand, and the great majority of American and English bacteriologists consider the Hoffman or pseudodiphtheria bacillus a completely different and distinct organism from the Klebs-Loeffler or true diphtheria bacillus. A number of this second group use the term "pseudodiphtheria bacilli" to include a group of bacilli resembling, but distinct from, the Klebs-Loeffler organism, of which the Hoffman bacillus is merely one member.

Those believing in the existence of two distinct organizms see many points of difference between the Klebs-Loeffler bacillus and the so-called Hoffman bacillus. The bacteriologists, however, who insist on identity argue that the properties of the different forms of the diphtheria organism are unstable and varying, one form readily assuming the characteristics of another form.

While in view of such a conflict of authorities the sanitarian will admit that academically the identity of separateness of the diphtheria and pseudodiphtheria bacilli is an open question, in practice, he must err, if at all, on the safe side. The measures he enforces must be such that the public health will be protected no matter which bacteriologic view is correct. At the same time he must be careful to avoid all restrictive regulations not justified by the facts or required by the necessities.

Many authorities, including the Massachusetts Association of Boards of Health, Parke and others, object to exercising any control at all over infected "contacts" or "carriers" not residing in an infected house. They believe that healthy persons with diphtheria bacilli in their throats are not a source of danger to the community. Moreover, owing to the ubiquitousness of the diphtheria bacilli, they regard the bacteriologic examination of "contacts" and the isolation of those found infected as unjustifiable, impracticable and unfair. Variot declares that if the medical inspectors of the city of Paris separated from their companions all the children who have in the pharynx the different forms of pseudo Loeffler and Klebs-Loeffler bacilli they would risk depopulating the schools without sufficient reason. Consequently only general sanitary measures are advised.

According to this view, persons harboring diphtheria bacilli should be warned that they are a source of danger to others, instructed to take certain precautions, induced to use antiseptic mouth washes and gargles, and kept under observation.

Other sanitarians, such as Abbott, Caiger, Cobbett, Dunham, McFarland and Babcock, Wesbrook and his associates, and others, on the contrary, regard a well individual with diphtheria germs in his throat as such a grave menace to the health of those with whom he comes in contact that they recommend his isolation. They believe that while such action unquestionably causes inconvenience to the individual, it is necessary for the general good.

I believe that the health authorities may properly disregard the presence of diphtheria-like bacilli in the throats of healthy persons who have not been in direct or indirect contact with a case of diphtheria, membranous or latent, and who have not themselves suffered recently from sore throat. It has been demonstrated by many investigators that virulent bacilli are seldom if ever present in the throats of healthy persons who have not been in contact with cases of diphtheria or with infected "contacts." The diphtheria-like bacilli found in healthy persons who have not been subjected to such contact are practically always nonvirulent and such persons consequently are not a source of danger. Denny, Graham-Smith, Kober, and Park and Beebe examined a total of 1511 persons with normal throats in whom there has been no possibility or probability of recent infection. Nonvirulent diphtheria-like bacilli were found in 30 (1.98 per cent.), but in only 2 were virulent bacilli found. In 1 diphtheria bacilli were found which were not tested for virulence (a possible 0.19 per cent.). Biggs, Garratt and Washbourn, Hewlett and Murray, and the Massachusetts Association of Boards of Health examined altogether 3374 healthy persons, but without making any inquiry as to the possibility of contact. Nonvirulent diphtheria-like bacilli were found in 134 (3.9 per cent.), virulent diphtheria bacilli in but 9 (0.2 per cent.). Bacteriologists of both schools are thus in accord concerning a point of such great importance to the sanitarian. Gorham, Kober, the Massachusetts Association of Boards of Health, Pugh, and Wesbrook, who regard all diphtheria-like bacilli as Klebs-Loeffler organisms, and Biggs, Cobbett, Graham-Smith, Park and Beebe and P. W. Williams, who believe in the existence of a distinct Hoffman or pseudodiphtheria bacillus, are all of the opinion that only a small percentage of the diphtheria bacilli found in well persons not recently exposed are virulent.

They believe, on the other hand, that when virulent diphtheria bacilli are present in the throats of healthy persons they have been derived as a rule either directly from cases of diphtheria or from individuals who have been in contact with such cases.

Conversely, it has been observed by Graham-Smith, Pugh and Williams that the diphtheria bacilli found in persons who had recently been in contact with the disease are usually virulent. It is my opinion, moreover, that in many instances where diphtheria bacilli are found in healthy throats the subjects are in reality convalescent from latent diphtheria. In a large number of my cases of latent diphtheria, for example, all signs of sore throat or other symptoms disappeared in one or two days, the patients then presenting the appearance of perfect health. Therefore, in regarding a person harboring diphtheria bacilli as healthy or normal, the possibility that such a one may be convalescing from a recent attack of latent diphtheria must be borne in mind.

When, therefore, healthy persons who have been exposed to diphtheria, although not residing in an infected house, are found to have diphtheria-like organisms in their throats they should be subjected to the same restrictions that govern infected "contacts" residing in the same house with a diphtheria patient. They should be excluded from work or school and prevented from mingling with other people until free from the bacilli, as determined by two successive negative examinations. Such restrictions, however, should not be enforced in any case in which the organisms have been proven by inoculation tests to be nonvirulent, although it is questionable whether the state or municipality should be put to the trouble or expense of making inoculation tests in the case of infected "contacts."

DETECTION AND ISOLATION OF INFECTED "CONTACTS" IN SCHOOL.

It will be impossible to detect all "carrier" cases in a community without making bacteriologic tests of everyone—an impracticable procedure in large cities. There are certain classes of intimate "contacts," however, who can be examined for the presence of diphtheria organisms.

Most writers are agreed that in a school cultures should be taken of all "contacts," and those found to be infected should be excluded and isolated. By such means Cobbett stamped out epidemics in Cambridge and Colchester, Wesbrook and his assistants were able to check the spread of the disease in Minnesota, and O'Hara, an assistant medical inspector, practically rid two Philadelphia public schools of diphtheria which for months had been unduly prevalent there. When, therefore, diphtheria develops in a child who is attending school or who has been recently in attendance, cultures should be taken from the throats of all the pupils and of the teacher in that child's classroom. All persons who are found to harbor diphtheria bacilli must be excluded from school and treated as infected "contacts" until they are shown by bacteriologic tests to be free of the germs.

DETECTION OF INFECTED "CONTACTS" IN INDUSTRIAL ESTABLISHMENTS.

I believe that many "carrier" cases become infected by fellow-workers in the shop or mill. I strongly recommend, therefore, that when a case of diphtheria develops in an industrial establishment all those who were in more or less contact with the patient, certainly all who were in immediate contact, be examined bacteriologically. This method of procedure will not only cut off further avenues of contagion when followed by the exclusion and isolation of those found infected, but may often discover the source of the original clinical case.

CONCLUSIONS.

1. The prevalence of diphtheria is due to the lack of control over latent cases of diphtheria and over the so-called "carrier" cases.

2. Diphtheria may occur in a latent form without pseudomembrane and with only slight symptoms.

3. Latent cases of diphtheria should be isolated until two successive negative cultures have been obtained.

4. All cases of sore throat should be reported to the health authorities and should be examined bacteriologically.

5. Infected "contacts" should be excluded from school or work and should not be permitted to frequent public places until two successive cultures have proved negative.

6. All who have been in contact with a diphtheria patient, whether at home, at school or at work, should be examined bacteriologically.

7. Disinfection of fomites and terminal disinfection of rooms and their contents is insufficient and reliance thereon treacherous. Animate carriers of infection are more dangerous than the inanimate.

DISCUSSION.

Dr. B. Franklin Royer, Philadelphia: I agree with Dr. Cohen in the main in what he has said. I want, however, to point out certain deficiencies in the bacteriological study of diphtheria. At the present time we have no cultural or staining method that can be relied upon to determine whether the diphtheria-like organism is or is not a true Klebs-Loeffler bacillus. There are organisms found in throat cultures so accurately resembling diphtheria organisms that more than a mere culture and a study of the stained slide must be done before you can say, in the absence of clinical symptoms, that you have a true Klebs-Loeffler bacillus. In the Municipal Hospital we regularly make cultures from all patients ill with scarlet fever. About eleven per cent. of the scarlet fever patients at present give positive cultures of a bacillus that can not be differentiated from the diphtheria organism.

During the past half year we have been making experiments by testing the virulence of these organisms in guinea pigs. In thirteen such positive culture cases in the scarlet fever wards recently reported to me, in which the pig test was made, not one was virulent to the pig. I believe many cases that are cultured and are supposed by some to be latent diphtheria are simply cases harboring germs resembling diphtheria. I believe that the time will come when health officers who continue quarantine on a culture will increase their facilities for making tests of virulence and that when a culture even in true diphtheria remains positive an abnormally long time a negative test of virulence will be sufficient to release the patient. Perhaps in many such cases the organism is not the true diphtheria organism.

In regard to quarantining a contact child for thirty days, if we believe that antitoxin does immunize, a child ought to be able to return to school, provided of course he does not go from the house where the diphtheria case is being treated and his throat is found to be clean.

Dr. H. H. Herbst, Allentown: I think it would be a very wise proceeding if we could have the present school law so changed that the child might be returned to school immediately after the physician declares the patient cured and there is a negative culture.

Dr. J. E. Rigg, Wilkinsburg: The question of the interpretation of the law regarding the thirty days after convalescence has been considerably discussed. At the time that law was passed I was sent to the State Board of Health and asked them to interpret what convalescence meant in these cases. We laid before them the fact that keeping a child out of school thirty days was a hardship and that the patient was as safe in the school two days after convalescence was complete and proper disinfection made as it was thirty days after such a time. We were given the right to interpret the phraseology of the law to mean that it should be extended as long as contagion lasted. For instance a case of scarlet fever simplex without sequellæ may be said to begin convalescence in ten days from the onset, but desquamation may not be complete for thirty to thirty-five days; it is, therefore, unfair to add thirty days from the time of complete desquamation or complete convalescence.

Dr. S. W. Newmayer, Philadelphia: This subject is one of great importance, and touches closely on the paper of "The Trained Nurse and the Medical Inspector in the Schools," which I read at this meeting. While it is of extreme importance to diagnose and isolate every suspicious case of diphtheria, in its earliest stages, still I agree with Dr. Royer, that we can not place an absolute diagnosis on one positive or negative culture. The question has arisen about our strict health rules on contagion, removing children unnecessarily from school and education. We all must admit it is better to err on the side of keeping a child home unnecessarily, than favor an epidemic of diphtheria, by erring on the other side.

Again, to prove that the quarantining of contagions by the health authorities does not effect the education of the children. I have recently gathered statistics of over three hundred children quarantined because of the presence of a contagion at their homes. It showed that the number of these quarantined children exempt from examinations at the end of the term was fifty-one per cent., which was the same proportion of exemptions in the same schools for children not affected by quarantining. Practically this should be so, because our health rules are practical, and exclude only for two to four weeks, and a child with only ordinary brightness can make up this small loss of time. In education it appears to be a rule that a short continued absence does not effect the education, but spasmodic irregular attendance, such as is caused by poor health, would effect it.

Dr. Henry W. Cattell, Philadelphia: Dr. Royer very happily called attention to the impossibility of diagnosing the Klebs-Loeffler bacillus by staining methods alone, the method which puts the yellow placard of diphtheria upon our doors in Philadelphia. There has recently been issued from Washington a paper by Dr. Anderson (Bulletin No. 30, Hygienic Laboratory, August, 1906) in which a new difficulty is presented in the diagnosis of diphtheria even by animal inoculation. Guinea pigs which have once been inoculated with Klebs-Loeffler bacillus or with its toxins and which have recovered from the inoculation, must not be used again for inoculative purposes nor should any of the offspring of such female animals be used for this purpose as there is a maternal transmission of immunity to diphtheria toxin, which, however, does not extend to the second generation. Transmission of immunity through the milk also occurs in guinea pigs. Hereafter, therefore, one must know the pedigree of the guinea pigs used in their research work. Dr. Cohen's idea as presented in his paper is too Utopian for practical work, and I agree with Dr. Park (Pathogenic Microörganisms, 1906), of the New York Board of Health, that "nonvirulent, diphtheria-like organisms retain their characteristics under various artificial and natural conditions and that they may be regarded from the public health standpoint as harmless."

Dr. William M. Welch, Philadelphia: In a community where diphtheria is prevalent no doubt there are many latent cases, as described by the writer, and they are dangerous to individuals about them. While such cases are not so liable to communicate the disease as those well-marked clinically, yet there is no restriction placed upon them and they constantly mingle with persons who are susceptible. The mere presence of the Klebs-Loeffler bacillus in the throat of an individual does not constitute diphtheria. There should also be disease. These organisms vary much in virulence. I regret exceedingly that the diphtheria organism is found so frequently in individuals who are not in the least ill. It has been stated on very good authority that they are present in two or three per cent. of all throats. Whether in such instances, they are active and capable of communicating disease I do not know. The only way to determine this fact is to test their virulence. As Dr. Royer has said there are organisms resembling the diphtheria bacillus that are not the specific organisms, and are incapable of transmitting the disease.

Some years ago, in culturing the throats of our scarlet fever patients in the Municipal Hospital, it was found in a series of one hundred cases of which the diagnosis was not given that thirty-three per cent. were positive. In the next series of one hundred cases, the diagnosis being given, the proportion of positive cultures dropped to about fifteen per cent. This bears out the fact just stated that there is an organism often found that is quite similar to, and yet not identical with, the diphtheria organism.

Dr. William G. B. Harland, Philadelphia: In rhinitis with bloody discharge cultures should be made to see that it is entirely free from any suspicion of diphtheria.

Dr. Cohen, closing: Unfortunately the bacteriologists do not help us. They are divided into two camps. The French school, with a few Englishmen and Americans, including Dr. Pennington of the Philadelphia bacteriological laboratory, regards all diphtheria-like organisms as Klebs-Loeffler bacilli. The German school and most Englishmen and Americans, on the other hand, believe that included among the diphtheria-like bacilli is the nonvirulent Hoffman or pseudodiphtheria bacillus as well as the Klebs-Loeffler organism. It is claimed by some that these two bacilli can be differentiated by means of the microscope, others say they can not. There are a number of tests to distinguish them, all of which are accurate, according to some authorities, and valueless according to others. The public health official and the general practitioner can not afford to wait until the bacteriologists agree. This matter may be under discussion and remain undecided for ten years more. The sanitarian must make rules in accordance with both views.

The diphtheria-like bacillus found in sore throats and in infected "contacts" is usually virulent. That found in healthy throats that have not been in direct or indirect contact with a diphtheria patient is usually nonvirulent. The latter may, therefore, properly be disregarded but persons harboring the former should be under the control of the health authorities.

Carry the radiance of your soul in your face; let the world have the benefit of it.

THE NATURE OF HERPES SIMPLEX, WITH A CONSIDERATION OF ITS DIAGNOSTIC AND PROGNOSTIC SIGNIFICANCE IN VARIOUS INFECTIOUS DISEASES.

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(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

There are many features of resemblance between simple herpes and herpes zoster, but there are also strong points of dissimilarity. In extreme cases of herpes, particularly about the face, it is sometimes difficult to distinguish between the zoster and simple forms. The clusters of firm vesicles on an erythematous base are identical in both. Histologically, the lesions in the skin and those in the affected nerve structures are practically the same in the two varieties. Thus far simple herpes might almost be regarded as a circumscribed abortive zoster; but there are other differentiating clinical features. The most important is the tendency to recurrence in simple herpes, contrasted with such a rarity of second attacks in herpes zoster as almost to suggest an immunity conferred. Indeed, second attacks of true zoster are no more common than second attacks of measles or scarlet fever. Head and Campbell met with only four cases in 400 cases of zoster. There are certain patients who are so subject to facial herpes that they suffer eight, ten or more attacks a year. In herpes zoster, moreover, there is more pain and the eruption follows in a general way the area of distribution of nerves. In elderly patients neuralgia may persist for weeks, months or years after the disappearance of the eruption.

PATHOLOGY OF BOTH FORMS OF HERPES.

Many years ago Barensprung suspected that herpes zoster of the trunk was caused by some lesion affecting the sensory spinal ganglia. Subsequent study has proved the correctness of this shrewd conjecture. A number of careful autopsies in persons who had suffered from herpes zoster have demonstrated gross structural change in the ganglia on the posterior roots of the spinal cord. The most important work on this subject has been published by Head and Campbell, who made autopsies on 19 patients who had recently or remotely suffered from herpes zoster. The acute changes found in herpes zoster consist in (1) extremely acute inflammation with exudation of small, round, deeply staining cells, (2) extravasation of blood, (3) destruction of ganglion cells and fibers, (4) inflammation of the sheath of the ganglion. The changes are always in the posterior roots, the anterior roots being normal. Herpes zoster, according to those investigators, might be justly spoken of as an acute posterior poliomyelitis analogous to the acute anterior poliomyelitis causing infantile palsy. The only cranial nerve in whose distribution herpes zoster occurs is the trifacial, and similar changes to those found in the spinal ganglion have been found in the Gasserian ganglion. As early as 1871 Wyss[1] described structural alterations in this ganglion in a patient who died in the early stage of supraorbital herpes zoster. Sattler has also found changes in this ganglion in trifacial zoster.

These findings are of importance in discussing the etiology of herpes facialis and its relation to herpes zoster, for in the former affection practically identical changes in the Gasserian ganglion have been found. W. T. Howard,[2] in an important contribution, gives the result of two carefully performed autopsies on patients dying of pneumonia, the one complicated by herpes zoster and the other by herpes labialis.

In the first case, a woman, 63 years of age, died of double pneumonia. This patient had a well-marked herpes zoster. In the mid-dorsal region of the left side in the spinal root ganglion (11th dorsal) corresponding to the area of the herpetic eruption, pronounced changes were found consisting of congestion and hemorrhages in the capsular and interstitial tissues. At one site of the ganglion were cellular infiltration and destruction of a few ganglion cells; furthermore, amylaceous and hyaloid bodies in another portion of the ganglion.

The second case was one of croupous pneumonia in a man 41 years of age, who died on the sixth day of the illness. Two days before death a well-marked herpes of the upper lip and nose appeared, more extensive on the left side. The following changes were found:—

Congestion of the veins about the origins of the superior maxillary branches of both Gasserian ganglia. Hemorrhages into the capsule and tissue, with interstitial cellular infiltration and compression and degeneration of the ganglion cells near the region of the superior maxillary branch of the left Gasserian ganglion. A few small areas of cellular infiltration in the same part of the right Gasserian ganglion. Marked congestion of the veins of the neck and brain and of the cerebral sinuses.

Councilman, Mallory and Wright[3] found acute inflammation of the Gasserian ganglion in cerebrospinal meningitis from extension of infection along the nerves.

ETIOLOGY OF HERPES ZOSTER AND SIMPLEX.

Both forms of herpes are due to a variety of etiologic factors. Though diverse in character, they all produce an intense irritation or actual inflammation of ganglia or nerve fibers. Exposure to cold or wet and sudden checking of profuse perspiration may act as causes; injury or pressure on a nerve trunk may produce herpes zoster. Herpes zoster has frequently been produced by the administration or accidental ingestion of arsenic, the drug setting up a neuritis. A number of dermatologists regard herpes as an infectious disease and quote epidemic prevalence of the affection in support of this view. Epidemics of herpes simplex are also occasionally observed. Zimmerlin[4] reports an epidemic of facial herpes occurring in the wing of a hospital at Basle, in which 16 out of 30 cases appeared among physicians and nurses.

Among the cases of herpes zoster and herpes simplex observed in the Polyclinic Hospital, I have never noted any particular evidence of epidemicity nor have these affections been more prevalent at any particular season of the year. We have treated 146 cases of herpes zoster and 93 cases of herpes simplex. These occurred in the following months:—

Herpes Simplex.		Herpes Zoster.	
January	10	January	13
February	8	February	5
March	6	March	12
April	7	April	11
May	7	May	8
June	10	June	16
July	14	July	19
August	6	August	10
September	5	September	13
October	10	October	12
November	4	November	16
December	6	December	11
Total	**93**	**Total**	**146**

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[1] Wyss, *Arch. fur. Derm. u. Syph.*, 1872.

[2] W. T. Howard, *Amer. Jour. Med. Sci.*, 1903, p. 255.

An important etiologic factor is age. Childhood and early adult life are the ages at which most cases of herpes simplex and zoster occur. Fifty-five per cent. of the cases of herpes simplex and 48 per cent. of the cases of herpes zoster developed in patients between the ages of 10 and 30 years.

HERPES IN INFECTIOUS DISEASES.

The occurrence of facial herpes, or, indeed, simple herpes anywhere on the cutaneous surface, is often of great diagnostic value in differentiating certain infectious diseases. The study of the incidence of this condition in various infectious processes shows that herpes is peculiarly related to certain diseases and forms an important part of their symptomatology. In certain other specific febrile disorders herpes occurs with great infrequency and even rarity.

Herpes in Croupous Pneumonia. Many writers have indicated the great frequency with which attacks of herpes develop in the course of croupous pneumonia. It is said ordinarily to occur between the second and fifth days of the disease, although it may appear earlier or later than this period. Most writers state that it occurs in from 12 to 40 per cent. of cases, and these figures are approximately correct. In 1863 cases, most of which were collated by E. F. Wells,[5] herpes was present in 30.6 per cent. These cases were observed by ten physicians in various parts of both continents, and may, therefore, be accepted as indicating the general incidence of herpes in this disease. In some localities and in certain epidemics, wide variation in the frequency of herpes has been observed.

Hermann, for instance, noted herpes in 65 per cent. of 40 cases of pneumonia, whereas, in other epidemics, this symptom has been present in as low as 13 and even 7 per cent. of the cases. Concerning the prognostic value of herpes in pneumonia, reference will be made later.

Below is appended a table showing the frequency with which herpes has been observed by various writers:—

HERPES IN CROUPOUS PNEUMONIA.

	Per cent.
Bleuler[6]	43
Drasche[7]	40
Volkmann[8]	13
Geissler,[9] 421 cases	43
Hawkins,[10] 220 cases	16
Hermann,[11] 40 cases	65
Rall[12]	34
Kissel[13]	100
Lebert[14]	13
Scheef,[15] 44 cases	20
Speck,[16] 50 cases	18
Shapira,[17] 173 cases	29
Short,[18] 286 cases	20
Townsend[19]	7
Waller,[20] 81 cases	47
Wünderlich,[21] 50 cases	50
Ziemssen[22]	50
E. F. Wells,[5] 498 cases	26

Herpes in Cerebrospinal Meningitis. In cerebrospinal fever, herpes is a symptom of great diagnostic value; although it is generally stated that herpes is more common in croupous pneumonia than in any other disease, statistics do not seem to bear out this assertion, as will be seen from the subjoined table:—

HERPES IN CEREBROSPINAL MENINGITIS.

	Per cent.
Tourdes	60
Leyden	75
Friis (Copenhagen) 54 of 107 cases	50
Jaffe (Hamburg)	41
Councilman et al. (Boston, 1897), 35 in 111 cases	31
Average	52

In the above reported figures, herpes was present on an average in 52.2 per cent. of the cases. As is true of other diseases, the incidence of herpes in cerebrospinal fever varies considerably in different epidemics, but the fact remains that it is a most common manifestation of the disease. The erythematous and petechial eruption which has given to the disease the name of spotted fever is

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[3] Mass. State Board of Health Reports, 1899.

[4] *Correspondenz Bl. f. Schweizer Aerzte*, March 15, 1883.

[5] E. F. Wells, *The Journal A. M. A.*, May 26, 1894, p. 767.

[6] Bleuler, *Inaug. Diss.*, Zurich, 1865.

[7] Drasche, Canstatt's Jahreab, 1860, Vol. ci, p. 207.

[8] Volkmann, *Inaug. Diss. Erlangen*, 147, p. 17.

[9] Geissler, *Arch. d. Heilkunde*, 1861, p. 115.

[10] Hawkins, *Lancet*, April 1, 1893.

[11] Hermann, *Lungenentzundung Munch.*, 1880, p. 36.

[12] Rall, *Pneumonie*, Eulenberg, 1852, p. 159.

[13] Kissel, *Klinik d. Brustkrankheiten*, Tübingen,, Vol. I.

[14] Lebert, *Inaug. Diss. Erlangen*, 1887, p. 33.

[15] Scheef, *Inaug. Diss. Tubingen*, 1882, p. 38.

[16] Speck, *Inaug. Diss. Marburg*, 1870, p. 30.

[17] Shapira, *Inaug. Diss. Wurzb.*, 1877, p. 58.

[18] Short, *Inaug. Diss. Wurzb.*, 1884, p. 58.

[19] Townsend, *The Journal A. M. A.*, Dec. 1, 1888, p. 789.

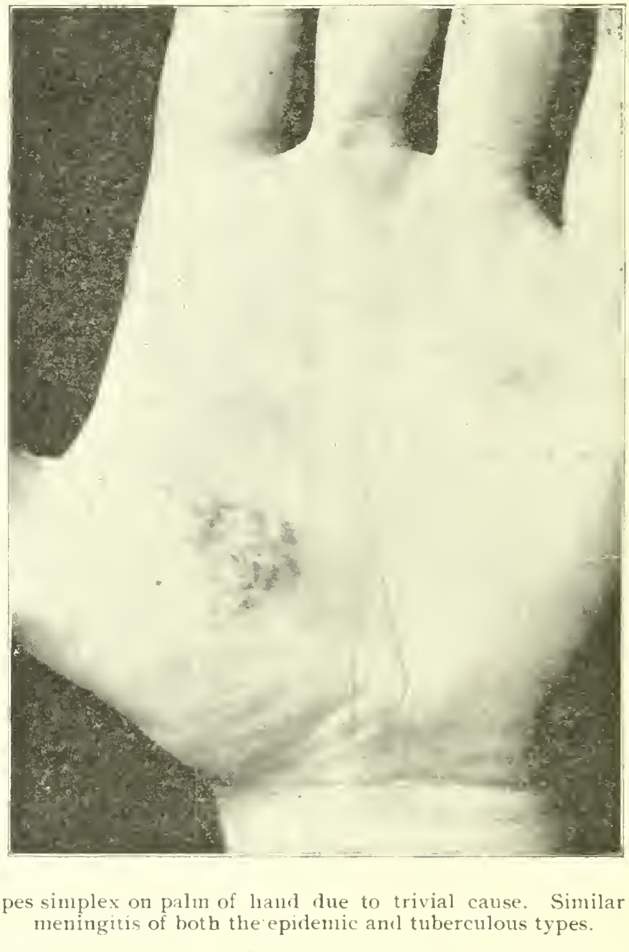
[20] Waller, *Op. cit.*, S. 4.

[21] Wünderlich, *Inaug. Diss. Tubingen*, 1858, p. 59.

[22] Ziemssen, *Pleuritis u. Pneumonie*, Berlin, 1863.

less frequent than herpes, and in some countries, as, for instance, Germany, is of great rarity. Herpes, therefore, may be regarded as the most frequent cutaneous symptom of cerebrospinal fever, although it is not its most characteristic eruption. Given a patient suddenly ill with headache, retraction of the head and herpes, and we have a strongly suggestive picture of an oncoming cerebrospinal meningitis. Herpetic vesicles are not limited to the face alone, but may occur on the neck or distal portions of the extremities. I recall seeing one patient in whom a patch of herpes was present on the last phalanx of the thumb. I have also, however, noted the appearance of herpetic vesicles on the finger in a case of tuberculous meningitis. Herpes accompanying very mild disturbances may likewise be circumscribed to the hand as in the photograph here reproduced. Herpes occurring in the course of cerebrospinal fever does not differ from ordinary herpetic attacks. Patches are at times more extensive, but frequently are quite limited as regards area covered.

Herpes in Malaria. Malarial fever comes third in the group of diseases in which herpes is a prominent symptom. Griesinger[23] observed herpes in 117 out of 390 cases, or about 30 per cent. Kelsch and Kiener[24] believe it to be present in one third of the cases. Its presence is of great value in diagnosis because of its comparative rarity in typhoid fever, a disease with which malaria may frequently at the outset be confounded. Herpes may occur in malaria during the cold or hot stage, or, indeed, at any time in the course of the disease.



A single patch of herpes simplex on palm of hand due to trivial cause. Similar patches are seen in meningitis of both the epidemic and tuberculous types.

Herpes in Influenza. It is not rare for herpes to develop in the course of attacks of influenza. The German Collective Investigation Committee found this symptom present in six per cent. of the cases collated. Curtin and Watson[25] found herpes zoster more common than herpes labialis. In about 6000 cases of influenza, they observed herpes zoster six times and mention the fact that eleven cases were reported by two other physicians. "Herpes labialis was rare, differing in this respect from malarial fever."

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[23] Griesinger, *Traite des Malad.* Infect., p. 59.

[24] Kelsch and Kiener, Quoted by Mannaberg, Nothnagel's *Spec. Path. u. Ther.*, 1899, 11,130.

Herpes in Typhoid Fever. It has long been noted that herpes occurs with great infrequency in typhoid fever; indeed, to such an extent is this true that some writers erroneously allege that it does not occur at all. Osler's figures on this subject enable us to judge of the infrequency of its development. Among 1500 cases of typhoid fever, herpetic outbreaks were found in 20 patients, or a little more than one per cent. of the cases. In the Johns Hopkins series of 829 cases herpes was observed in 29 patients, or 3.5 per cent. D. J. M. Miller[26] recently observed 4 cases of herpes among 250 cases of typhoid fever examined. Many of the older writers maintained that even when all the characteristic symptoms of typhoid fever were present a case must not be regarded as this disease, if herpes labialis developed. Some modern writers refer to herpes as negatively pathognomonic of typhoid fever. Certainly this symptom is so uncommon that the development of herpes in the course of a febrile attack would tentatively negative the diagnosis of typhoid fever. In acute tuberculosis and in typhus fever, both affections which may come into differential conflict with typhoid fever, herpes is occasionally observed.

Herpes in Relapsing Fever. The occurrence of herpes in relapsing fever is likewise uncommon. Semon,[27] in an epidemic of relapsing fever in Berlin, observed only four cases of herpes in 160 cases of the disease.

Herpes in Other Diseases. Concerning the frequency of herpes in the acute exanthematous diseases, no published figures are available so far as I have been able to ascertain. Herpetic outbreaks are of great rarity in smallpox. Among over 3000 cases of smallpox that I have seen, I have observed but two cases of herpes; I am unable to present any figures in regard to the frequency of herpes in scarlet fever. I do not think, however, that this manifestation is so rare as in smallpox. From a general impression that I have received I should estimate that herpes occurs in about three per cent. of the cases. In diphtheria attacks of herpes are also occasionally observed.

THE PROGNOSTIC VALUE OF HERPES.

Many writers have insisted that the development of herpes in certain infectious diseases, notably pneumonia and malaria, is of distinct value in enabling one to forecast the outcome of the illness. In what manner the appearance of a few fever blisters becomes the harbinger of a favorable development of the disease and ultimate recovery can not be explained. The herpetic attack is sometimes regarded as analogous to a critical chill or discharge, but the time at which the herpes develops in the course of many illnesses precludes such an explanation. The extent to which herpes may be regarded as a symptom of favorable omen in pneumonia and malaria can not be justly estimated at the present time. Most authors, however, attribute to the development of this symptom a favorable prognostic significance. Osler, in speaking of herpes in pneumonia, conservatively says: "It is supposed to be of favorable prognosis, and figures have been quoted in proof of this assertion." The opinion that herpes was a favorable indication was believed many years ago. Hebra, the great Vienna dermatologist, did not share this view. In 1866 he wrote, "Observation teaches that this form of herpes is neither of good nor of bad augury with reference to the probable outcome of the disease which it accompanies." If we rely, however, on the statistics published we can not fail but be impressed by the remarkable discrepancy in the mortality of cases of pneumonia associated with herpes and those without this eruption.

Geissler presents strong evidence of the prognostic significance of herpes in 421 cases of pneumonia studied by him. Of 181 patients with pneumonia, with herpes, 17, or 9.3 per cent., died; of 239 without herpes, 70, or 29.3 per cent., died; 159 patients were over 30 years of age; of those, 50 had herpes and 10 patients, or 20 per cent., died; 109 had no herpes, and of this number 58 patients, or 53.2 per cent., died.

Sir Dyce Duckworth believes that herpes is a good sign in pneumonia, usually occurring in cases in which a well-defined crisis develops on the sixth day. Cases that are grave and prolonged with deferred crises usually do not present it.

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[25] Curtin and Watson, *Climatologist*, Feb., 1892.

[26] *International Clinics*, III. Series 16.

[27] Semon, *Jour. of Cut. and Vener. Dis.*, 1884, Vol. XI., p. 146.

In malarial fever, herpes is likewise alleged to constitute evidence of an early and favorable outcome of the disease. Dr. Arthur Powell, at whose hospital service in Assam, India, more than 100 patients with malaria are seen daily, states that the development of herpes is invariably an evidence of the cessation of the attack. He says: "If during an attack of remittent or intermittent fever, a patch of herpes breaks out on the lips, face or elsewhere, I always look on this as a sign that the malarial attack is over. In all my experience, I have never met a case to negative this theory, which I thought was well known by our profession." This may be true of malaria in India, but in this country herpes occurs often early in the course of malaria and in attacks that do not promptly cease after its appearance.

That herpes has any prognostic significance in cerebrospinal fever I can not from my experience with this disease believe, although some writers contend that it has. Tourdes is of the opinion that herpes is a symptom of good omen. Figures, however, do not appear to bear out such a contention. In an epidemic in Copenhagen, the mortality of cerebrospinal meningitis accompanied by herpes was 32.3 per cent., while in cases without herpes it was 35.5 per cent., too slight an increase to be significant.

Another form of simple herpes to which reference has not been made is herpes genitalis. This is often regarded as occurring reflexly from genital irritation. As Fournier, Bergh and Unna have pointed out, it is much more common in prostitutes that in married women; furthermore, it frequently follows gonorrhea and other venereal infections. It is not improbable, therefore, that, in the majority of cases, it may be of infectious origin, as are most of the cases of facial herpes. Genital herpes commonly exhibits the same tendency to recurrence as is observed in some cases of facial herpes.

It would appear, therefore, that apart from traumatism to nerve structures most cases of herpes—herpes zoster, facial herpes and genital herpes—are of infectious origin. The probabilities are that a toxin or poison is absorbed which has a special affinity for nerve tissue, particularly for the cells of sensory ganglia. It is not necessary to assume that this poison which might be termed an "herpetoxin" is the result of any one specific microorganism. While two of the diseases in which herpes is a prominent symptom (pneumonia and spotted fever) are of diplococcic origin, as is likewise gonorrhea, the third disease, malaria, is produced by an entirely different form of parasite. Just as rashes indistinquishable from that of scarlet fever may be produced by a variety of toxins and drugs, so may herpes be produced by certain toxins, and herpes zoster may be caused by arsenic. In the one instance we have an erythemogenic toxin or drug, and in the other an herpetogenic toxin or drug. That pneumonia, spotted fever and malaria should be so frequently accompanied by herpes, and typhoid fever, smallpox and other exanthemata so rarely, can not in the present state of our knowledge be explained. It certainly seems reasonable to attribute the herpes to some peculiar quality of the associated toxin.

It must, of course, be remembered that some persons are peculiarly subject to simple herpes, accompanying coryza, gastric disturbances and other mild indispositions (see illustration). In such individuals there may be an unusual susceptibility of the nerve tissue to the action of toxins which in other persons might produce no herpetic outbreak. Certainly the well-established association of herpes with the three infectious diseases mentioned can not be explained on the basis of personal idiosyncrasy, for it is too well demonstrated by the extended observation of experienced clinicians in all countries.

In considering the diagnosis of a disease in which herpes develops, it is well, however, to obtain from the patient or his relatives some history as to the previous occurrence of herpetic attacks.

CONCLUSIONS.

1. Herpes zoster and herpes simplex—both the facial and genital varieties—while not clinically identical, are closely related. The histology of the cutaneous lesions and the observed changes in the nerve structures examined appear in all to be practically the same.

2. It is highly probable that the vast majority of all cases of herpes of the various types are the result of the action of a toxin. This proposition necessarily assumes the infectious origin of herpes.

3. The frequency of herpes simplex in

certain infectious diseases and its rarity in others is evidence that the toxin must possess certain peculiar qualities in order to exercise a selective affinity for sensory nerve structures.

4. The toxins producing herpes simplex and herpes zoster are in all probability not the result of the action of any specific microorganism. This is certainly true of the former and by analogy may be assumed to be true of the latter disease.

5. The three diseases in which an "herpetogenic" toxin develops with a fair degree of constancy are pneumonia, spotted fever and malaria. Its frequency in these diseases and its comparative rarity in typhoid fever and many other infectious maladies make its appearance a symptom of considerable diagnostic import.

6. In view of the tendency of certain individuals to recurrent attacks of facial herpes from slight indispositions the fact as to such a history should always be elicited before according to herpetic outbreaks the diagnostic value referred to.

DISCUSSION.

Dr. James H. McKee, Philadelphia: I would like to ask Dr. Schamberg whether he has not found herpes simplex rather common in epidemic influenza. One might cite many authorities in this connection. I think Tyson has spoken of it. Curtin and Watson have spoken of it as occurring with very great frequency and it has been my experience to have seen it so frequently in children as to say that the occurrence of herpes has furnished a decidedly important supplementary evidence of making a clinical diagnosis of epidemic influenza.

Dr. Schamberg, closing: The German Collective Investigation Committee on Influenza gives the incidence of herpes in this disease as six per cent. Curtin and Watson have found herpes simplex uncommon in influenza. They, however, observed herpes zoster in quite a few cases.

In strapping the chest for fractured rib, two points should be particularly noted: 1. The straps should pass well beyond the median line. 2. They should be applied in full expiration. One or two straps passed over the shoulder help much to secure immobilization.—*American Journal of Surgery.*

A MODIFICATION OF THE TECHNIC OF FIXATION OF THE MOVABLE KIDNEY.

BY GEORGE ERETY SHOEMAKER, M.D.,
Gynecologist to the Presbyterian Hospital,
Consulting Surgeon to the Woman's Hospital, Philadelphia.

(Read at the meeting of the Medical Society of the State of Pennsylvania, held at Bedford Springs, September 11-13, 1906.)

There are many methods of suturing the kidney to its place, some good and some bad. The question of material for sutures, or that of giving these their chief hold on the capsule or on the substance of the organ; again, whether the capsule proper is to be stripped or not, how many sutures are to be placed and where, I leave out of the discussion for the present; and likewise whether not sutures, but granulation methods, are to be relied on.

The point of my communication deals chiefly with the disposition of the connective tissue and fat which surround the kidney. On making an incision through the back down on the field through which a movable kidney makes its excursions, it is noted that a considerable development of the fatty capsule always exists and that this with its connective tissue is attached definitely to the parietal wall. The outer layer of this fat does not move up and down with the kidney, but as one tears or cuts through it there are encountered more and more movable or loosely attached layers, which permit of a large range of sliding motion until the kidney itself is reached, the tissues becoming more and more definitely fixed with relation to the kidney as its own fibrous capsule is approached. A little fat and connective tissue nearest the kidney move with it up and down. The large excursus of the kidney, therefore (six, eight inches or more), is not obtained by a naked kidney sliding in a closed sac; nor is it a kidney plus fatty capsule sliding on a naked parietal wall. Its slippery mobility is due to the pulling out, overstretching and enlarging of connective tissue meshes midway within the thickness of the fatty capsule, until the tissues there slide loosely in all directions on themselves like dartoic tissue.

Now some methods have aimed to fix the kidney by cutting away the fatty capsule directly and stitching the kidney to the parietes. Others involve tearing a buttonhole through the fat to the kidney and delivering the organ like a button through its fatty capsule and through the wound on the back, after which the fat is cut away as much as possible, the kidney returned and sutured. Both these methods by cutting it away fail to utilize an important natural ally; namely, the cushion of fat which is needed inside of and below the organ.

AUTHOR'S TECHNIC.

The method which I have adopted with satisfaction in a number of operations is this: The kidney is delivered endwise through a hole torn in its capsule and brought out of the wound on the back. The process of cleanly tearing off the fatty capsule from the organ around to the vessels is completed. The kidney then projects through an opening in the outer portion of the fatty capsule, while the inner portion, partly turned inside out, is brought up close to the outer by the tension on the pelvis and vessels. In order to prevent what would otherwise occur, the replacing of the kidney into its old loose bed as soon as it is put back within the wound, two chromicized catgut mattress sutures are introduced below each pole of the kidney into the fatty capsule in such a way as to close the opening or buttonhole out of which the kidney came. These sutures are not attached to the parietes. If now an attempt be made to put the kidney inside the abdomen again, it will be found that it will not go. There is no place nor space for it. A space is made (most conveniently before delivering the kidney) by the fingers or a blunt curved instrument peeling off the connective tissue and fat from the muscular and fascial structures of the wall of the abdomen, especially above the wound, and into this new bed the kidney is made to go. It will now be observed that, even without suturing, the organ is held definitely in place and will not slide up or down as it would do were it replaced without closing the opening out of which it originally was extracted.

Sutures are now introduced. The particular method adopted by me is that of forming several downward loops of chromicized catgut passing in and out of the fibrous capsule and escaping the stroma of the organ. This was the form of loop suture which was experimentally shown by Brödel to have the greatest holding power. Care should be taken to form a bed sufficiently large back of the fat, as some pressure, possibly not harmless, would otherwise be made on the kidney in reducing it.

Avoiding the nerve trunks, the wound is closed by deep catgut and half deep wormgut, leaving a small cigarette superficial gauze drain for two days. Experience in several cases extending over more than one year has shown the method to be successful in keeping up the organ and to be free from bad consequences. Among the advantages of the method is the holding of the organ up and back by means independent of sutures and the supply of at least some support on the abdominal side.

DISCUSSION.

Dr. J. C. O'Day, Oil City: I would like to add one thing to the Doctor's paper. There are too many kidneys anchored. If there is any one particular surgical procedure which calls for conservatism it is this tampering with loose kidneys. There are so many of us aspiring to surgical fame that, unless we are very careful, we are guilty of sins of commission. Personally, I believe this is one place where very many such sins have been committed. We must not ignore the fact that movable kidneys belong to that unfortunate class of individuals known as neurasthenics, and that the kidney's freedom of mobility is but a mere symptom of the general euteroptosis usually coëxisting,—a general relaxation in which the supports of the kidneys are included. I am afraid in these cases we are given too much to surgical interference. Where the excursion of a movable kidney is sufficient to produce constriction of the vessels or ureter, then such an operation as Dr. Shoemaker has outlined would be indicated and productive of much good. I have had many women come to me, deploring their "floating kidney." They were all suffering from neurasthenia, had not the least idea why they could not feel well; had been migrating from one doctor's office to another, till finally some doctor triumphantly pointed out the movable kidney, and then all interest centered around that spot. No operation will ever cure such cases. When an operation to fix the kidney is indicated, I prefer the operation of Murphy, wherein the capsule is incised from pole to pole and rolled back upon either side into a scroll. A chromic suture is then passed through the kidney substance, around either scroll and out through the muscle and fascia of the back.

Dr. John J. Gilbride, Philadelphia: It appears to me that this question of the disposition of the fatty capsule is quite an important one. By the removal of the fatty capsule it would seem that you thereby reduce the intraabdominal pressure and the tendency would be greater for the recurrence of the original condition. Therefore, I think the fatty capsule should be retained, if possible. As Dr. Shoemaker pointed out, by loosening the parietal layer of the fatty capsule and pushing it forward and anchoring the kidney to the lumbar muscles, the fatty capsule can be preserved. If the fatty capsule is preserved, the intraäbdominal pressure will be retained and, therefore, is more likely to cause the retention of the kidney in its proper position.

Dr. Shoemaker, closing: I would say that I purposely did not take up the question of the advisability of the operation. Of course, we all agree that there are few cases in which it should be done. In the great majority, we should not even tell the patient when we discover a movable kidney.

AFTER EFFECTS OF DIPHTHERIA ON THE HEART.

F. W. White, Boston (*Journal, A. M. A.*, October 21), from a study of seventy-eight cases of diphtheria with heart complications, after their discharge from the Boston City Hospital, and kept under observation for from five months to a year, and in none of which was there any evidence of heart disease antedating the diphtheria, deduces, in substance, the following conclusions: 1. The cardiac disturbance after diphtheria usually presents the picture of a mitral insufficiency with irregular heart action and few symptoms. Occasionally there is only rapid pulse or cardiac irregularity alone. 2. Moderate disturbance of the heart is common after diphtheria and in many cases persists for from two to six months after the original illness. 3. Frequently the cardiac lesion does not clear up in the first half year, but lasts much longer; some patients recover; others probably do not. The duration of the heart trouble is usually in proportion to the severity of the original illness. 4. The fact that only few heart symptoms are often present after diphtheria should not mislead us as to the importance of the injury to the heart. 5. Cardiac disturbance of long duration after diphtheria may be entirely recovered from, and hope should not be given up in individual cases. 6. The treatment of the condition consists in a sufficient period of rest in bed, and then in watching the effects of mild exercise on the heart for several months at least and grading it to meet individual requirements. White hopes to follow up his cases still further, and, therefore, considers his paper as a preliminary report.

NOTES ON NON-OPERATIVE GYNECOLOGY.

Sarah J. McNutt, while believing that where an operative procedure is indicated and there is neglect to give the patient the benefit of such procedure, the gynecologist in charge is recreant to duty, nevertheless maintains that in many instances a woman with pelvic or abdominal disease may recover under medical treatment only, without operation. The cases calling most urgently for operative treatment are those of pelvic or abdominal tumor, the accidents of childbirth, malignant disease, and pus collections. In order to deal successfully with the non-operative cases one must realize that while the patients present themselves for gynecological treatment, many of their symptoms are not purely and exclusively gynecological, but rather of reflex origin. While the local conditions must be treated, the local measures adopted will be made more effective if combined with them is a careful consideration of the general condition. The most frequent general symptoms are the derangements of secretion and excretion, anemia, and nervous symptoms. The most frequent local conditions are (1) displacements of the uterus, with or without displacements of the adnexa; (2) catarrhs, acute, subacute, and chronic, confined to the uterus, and (3) the same, with extension to the tubes and secondary involvement of the ovaries. In many cases one can use local treatment indefinitely and utterly fail to cure the patient if with it does not go general medication and hygiene. This includes diet, clothing (few women dress properly), and carefully regulated out-of-door life, with some interest to divert the mind from introspection.—*Medical Record*, November 11, 1905.

Don't make promises to heal when it is impossible to heal.—Osler.

The Pennsylvania Medical Journal.

PUBLISHED MONTHLY.

Official Organ of the Medical Society of the State of Pennsylvania.

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Entered as Second-Class Matter in the Post-office at Athens, Pa., October 4, 1904.

Athens, September, 1907.

HISTORY OF THE LOWER FORMS OF LIFE.

The growth of knowledge of the life history of the lower forms of life has been slow and interesting. Anaximander of Miletus, Greece (610 B. C.), held that animals were formed from moisture, and Aristotle (384 B. C.) taught that every dry substance that becomes moist and every moist body that becomes dry, produces living creatures. He also asserted that animals were formed in putrefying soil. A true conception of the wonderful changes of form which insects undergo was unknown before the year 1618. Prior to that time insects were supposed to be spontaneously generated. Eels were supposed to be generated from the slime of the Nile and maggots were thought to be spontaneously generated in meat. Dr. Francesco Redi, 1668, physician to the Grand Dukes Ferdinand the 2d and Cosmo the 3d, of Tuscany, made an interesting series of experiments and proved that maggots never develop in meat if flies are prevented from laying their eggs on it. He showed that the maggots were the young of the flies and that the maggots hatched from eggs laid by the flies, and destroyed the belief in spontaneous generation for all time. The wonderful changes in the form of insects is well illustrated by the butterfly, the female of which lays a minute egg on a plant; the egg hatches and produces a little caterpillar which feeds on the plant until full grown; it then changes into an immovable apparently dead object, termed a chrysalis. In due time a butterfly emerges from the chrysalis and the same process is repeated through the seasons indefinitely. It is necessary to understand these life histories to get a rational idea of insect life in relation to economic entomology.

In 1862 Pasteur proved that many floating particles in the air are living, organized bodies. He also proved that animal solids do not putrefy or decompose if kept free from access of germs. In 1873 Obermeier observed minute, actively moving, flexible, spiral organisms in the blood of patients suffering from relapsing fevers. In 1719, Antonius von Leeuwenhoek by the aid of the lense discovered minute organisms in water and in human feces. These discoveries were followed by equally important ones demonstrating the cause of consumption, cholera, plague and other diseases. Thus many diseases are caused by minute living organisms, which are in some cases vegetable and in some cases animal. Bacteria are "very minute, unicellular vegetable organisms, almost always devoid of chlorophyll, and generally unbranched, that reproduce themselves, asexually by means of direct division or fission, spores or gonidia. They are allied closely on the one hand to the higher fungi, such as the moulds, and on the other to the algæ" (Pitfield). They are found everywhere except in the atmosphere of high mountains. They may enter the human body by means of the digestive tract, the respiratory tract, and the skin and mucous membranes if abraded, punctured or broken. Most of the species of bacteria are harmless, some beneficial, and others dangerous. The unit of measurement for bacteria is one micromillimeter, equal to one twenty-five thousandth of an inch. These low forms of life multiply with amazing rapidity and, being so small and so numerous, it can readily be understood how they may be scattered by insects, by the wind and numerous other ways. H. S.

THE READING SESSION.

The program arranged for the session at Reading this month is an interesting one and everything indicates a large attendance. The members are referred to the JOURNAL for last month and to the succeeding pages of this number for particulars regarding railroad rates, hotels, program, and entertainments. Especially is it to be noted that many members are planning to reach Reading on Monday, so that the Tuesday morning session will open promptly at 10 o'clock with a large attendance. The official program will vary somewhat from the preliminary program as printed in the JOURNAL for August. Lack of space forbids giving the corrected scientific program in this issue.

The first meeting of the House of Delegates will be on Monday evening at eight o'clock. Members who have not already done so, should at once consult their local ticket agent, and if necessary, secure card orders through the state secretary for reduced rates. S.

TWO NEW COUNTY SOCIETIES.

On August 7 Dr. L. B. Kline, councilor for the Fourth District, with visiting physicians from Mifflin and other counties, organized at Mifflintown the Juniata County Medical Society with ten members. This is the third time the physicians of this county have had a society organization. The officers elected are: President, I. N. Grubb, Thompsontown; vice-presidents, H. F. Willard, Mexico; R. M. Quig, East Waterford; secretary, B. F. Long, Mifflin; treasurer, I. G. Headings, McAlisterville; reporter, B. F. Long, Mifflin; censors, A. W. Shelley, Port Royal; B. H. Ritter, McCoysville.

On August 9 Dr. G. D. Nutt, councilor for the Sixth District, assisted by Dr. C. L. Stevens, organized at Dushore the Sullivan County Medical Society with eight members, all but two of whom were already members of either the Bradford or the Lycoming societies. The above named officers were present by invitation and at first were inclined to discourage the formation of a new organization, but the physicians present were so enthusiastic in its favor that the society was formed and promises well for a small society. The following officers were elected: President, M. E. Hermann, Dushore; vice-presidents, H. I. Woodhead, Forksville; W. H. Randall, Laporte; secretary, W. F. Randall, Dushore; treasurer, P. C. Biddle, Dushore; reporter, W. F. Randall, Dushore; censors, J. R. Davies, Forksville; A. J. Bird, Overton; J. L. Christian, Lopez.

The Fulton County Medical Society organized last year with seven members has failed to keep up its existenee and some of the members have joined the Franklin society. There are now only four counties in the state without a component society, Cameron, Forest, Fulton and Pike. Not one of these counties has physicians enough to warrant the organization of a separate society, and the majority of the eligible physicians of each belong to neighboring societies. S.

MORE COMPANIES RESTORE THE $5.00 FEE.

Last month we noted that the Equitable Life Assurance Company had restored the five dollar fee for examination. The Mutual Life Insurance Company, the Union Central, and the Fidelity have recently advanced their medical examination fee to five dollars. S.

THE USUAL WAY WITH SOME OF THEM.

The *Journal of the A. M. A.* for August 24 calls attention to the fact that Dowie, who denounced physicians in public, quietly called in a physician when he was sick. Attention is also called to the news from Boston that Joseph Armstrong, manager of the *Christian Science Journal* and publisher of all the Christian science literature, when wanted recently to give a deposition in the case now pending against Mrs. Eddy, was found to be at home sick with pleurisy and under the care of a regular physician. S.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

The thirty-third annual meeting of the Mississippi Valley Medical Association will be held at Columbus, O., October 8, 9 and 10, 1907, under the presidency of Dr. H. Horace Grant of Louisville, Ky. The orator in medicine will be Dr. George F. Butler of Chicago, Ill., and the orator in surgery, Dr. Frank D. Smythe of Memphis, Tenn.

Up to August 15 thirty-eight papers were offered on a variety of subjects. Dr. Harold A. Miller, Pittsburg, is down for one on "Pregnancy Complicated by Pulmonary Tuberculosis." S.

PROBILIN.

The Council on Pharmacy and Chemistry of the A. M. A. has examined samples of probilin as offered to the American profession and has refused it recognition. The formula is regarded as deceptive and the pill weighs one fourth less than the amount of active drugs it is said to contain. The pill is "made in Germany" but "a careful research through German text-books, lists of new remedies, price lists of German wholesale druggists, etc., fails to reveal any evidence that this preparation is used and recognized in the land of its origin." S.

WORK FOR THE HOUSE OF DELEGATES.

The Cumberland County Medical Society has instructed its members of the House of Delegates to introduce the following motions at the Reading session:—

1. To increase the amount paid in to the medical defense fund from ten cents to twenty-five cents.

2. To ask the House of Delegates to instruct the committee on public policy

and legislation to prepare and introduce a bill at the next session of the legislature making the physician's bill an open account and collectable after six years, the same as a grocer's or other bill. A. R. A.

MEETING OF THE FIFTH CENSORIAL DISTRICT ASSOCIATION.

The second annual meeting of the Fifth Censorial District Association was held under the auspices of the Cumberland County Medical Society, at Mt. Holly Springs Park, Cumberland County, on Tuesday, August 13, with thirty-nine physicians present. Dr. George E. Holtzapple, censor for York County, and Dr. J. H. Drawbaugh, censor for Cumberland County, were present. Dr. John Montgomery, censor for Franklin County, is absent in Florida on account of his health, and the Fulton County Society has ceased to exist.

The president, Dr. A. A. Long, York, called the general meeting to order in the pavilion of the park, at twelve o'clock, noon. The minutes of the first annual meeting were read and approved. The following officers were then chosen: President, Dr. James Evelyn Pilcher, Carlisle, vice-president, Dr. James Rea, York, secretary and treasurer, Dr. John J. Coffman, Scotland.

The chair appointed Drs. I. C. Gable and A. R. Allen a committee to conduct the president elect to the chair. Dr. Pilcher in taking his seat expressed the appreciation of the honor conferred on him and in behalf of the Cumberland County Medical Society extended a cordial welcome.

Dr. John J. Coffman, in behalf of the Medical Society of Franklin County, extended an invitation to the association to hold its next annual meeting in Franklin County, which invitation was on motion accepted.

Dr. Isaac C. Gable, President of the Medical Society of the State of Pennsylvania, in an interesting talk, outlined a plan of organization of the medical profession and gave the origin and arrangement of the censorial and councilor districts adopted by the state society.

Dr. T. W. Preston, president of the Cumberland County Society, spoke of the relation of physicians to one another and urged more professional unity. Dr. Israel Betz, president of the York County Society, discussed various matters of interest and related reminiscences of the early members of his county society.

At one o'clock the assembly sat down in an adjoining restaurant to a well prepared dinner which was enjoyed by all.

The meeting reconvened at two o'clock, when Dr. Long gave a history of the first annual meeting of the organization and emphasized the importance of these gatherings.

Dr. M. J. McKinnon of York, one of the oldest practitioners in that county, spoke of the pleasure of these meetings and suggested the advisability of bringing our wives and lady friends to these meetings. This was left for further discussion at the next annual meeting.

Dr. Holtzapple appealed for social and fraternal improvements of our profession, and urged more frequent attendance upon society meetings as a means of bettering the social feelings of members.

Dr. James B. Amberson, Waynesboro, spoke of the fraternal side of the profession and extended an earnest invitation to all to attend the next annual meeting.

Dr. W. T. Bishop, Harrisburg, spoke of the features of these meetings and remarked that, as a rule, the men who have the most to do are usually the ones who most frequently attend medical society meetings. He thought that the annual dues of the medical societies should be increased.

Dr. A. R. Allen, Carlisle, spoke of the work of the various committees on public policy and legislation, and discussed the ways and means used in behalf of the Bowman Bill of the last legislature.

The fact that some insurance companies have recently raised their rates for examination to the old price of $5.00 was reported and discussed. Remarks were made by Drs. Gable, J. J. Koser, Shippensburg, L. M. Kauffman, Kauffman, and others, the discussion taking the form of a symposium on organization and fraternal work.

Special efforts will be made to have a large attendance at the next annual meeting which will be held in Franklin County.

JOHN J. COFFMAN, Secretary.

Changes in Membership of County Societies.

The following new names have been reported from August 1 to September 1: Charles B. Dotterer, Boyertown; James C. Crawford, Tyrone; W. P. Harlos, L. A. Lantz, Altoona; Walter Allen Blair, Patton; William Henry Heiser, Nanty Glo; Harry Hartzell Penrod, Johnstown; William H. Banks, Darwin M. Crawford, Mifflintown; Isaac N. Grubb, Thompsontown; Isaac G. Headings, McAlisterville; James G. Heading, Academia; Brady F. Long, Mifflin; Benjamin H. Ritter, McCoysville; Robert M. Quig, East Waterford; Amos W. Shelley, Port Royal; Herman F. Willard, Mexico; Alma Wehlau, I. W. Severson, Scranton; John D. Hoffman, Jackson Center; Arthur S. Koenig, Lewistown; Philip G. Biddle, Dushore; John R. Davies, Forksville; Henry P. Hammond, Franklin; John C. Wilkins, Oil City; Edward G. Ankney, Pleasant Unity; George L. Krieger, New Kensington.

Robert Cochran E. Beatty (Coll. of Phys. and Surg., Baltimore, '82) died at his home in Pittsburg, recently.

Matthew A. Graff (West. Penn. Med. Coll., '01) of Sewickley, died at Pittsburg, August 15, from the effects of an operation for appendicitis, aged 31.

Sorden McClure (Univ. of Penn., '99) died at his home in Philadelphia, August 7, from diphtheria, aged 29.

William A. Rocap (Jefferson Med. Coll., '88) died at his home at Olney, Philadelphia, August 29, from diabetes, aged 38.

William Thomson (Jefferson Med. Coll., '55) died at his home in Philadelphia, August 3, aged 74.

John W. Mosser and George M. Robinson, McConnellsburg, have been transferred from the Fulton County Society to the Franklin County Society.

James H. Montgomery has resigned from the Franklin County Society.

G. Edgar Dean and Eugene A. Heermans have resigned from the Lackawanna County Society.

Thomas B. Allison, John Ballagi, Claude Barton, Esther L. Blair, Lewis E. Davis, David John Evans, William A. Jones, Charles S. Lindsay, Henry D. Long, Z. B. Ogden, Eugene O. Pearson, Frank J. Phillips, Charles A. Rankin, Simon Seegman, Laura G. Shrom, and R. C. M. Stewart are no longer members of Allegheny County Society.

William C. Yolton is no longer a member of Beaver County Society.

L. B. Denison, Gideon W. Durga and Frederick G. Newton are no longer members of Bradford County Society.

Charles L. DeWolf is no longer a member of Butler County Society.

Warren W. Andrews, John W. Bright and John Sebring are no longer members of Center County Society.

Joseph Bringhurst, Frank D. Emack, Hiram L. Lutz, Frank Massey, Albert E. Osborne and Hiram T. Williams are no longer members of Chester County Society.

S. Snively Bishop, Joseph C. Davis, Arthur B. Moulton and Thomas Stewart are no longer members of Cumberland County Society.

William T. Davies, Claude W. Gillette and David I. Miller are no longer members of Dauphin County Society.

Vander K. Corbett, Arthur F. Davis, Daniel Chester Groves, George B. Hall, W. E. Hyskell, J. P. McFarlane and Eugene B. Sharp are no longer members of Elk County Society.

William K. Andrews, R. W. Battles, Richard O. Miller, Charles A. O'Dea and John E. McCuaig are no longer members of Erie County Society.

Dayne H. Griffith has removed from Fayette County and is no longer a member of that society.

G. M. Brubaker is no longer a member of Franklin County Society.

The Fulton County Medical Society has disbanded and Harry C. McClain, William L. McKibben and Henry S. Wishart are no longer members of the state society.

William A. Prideaux is no longer a member of Indiana County Society.

Frank Bleakney has removed from Jefferson County and is no longer a member of that society. Charles S. Aldrich, Parker P. Horner, Edward V. Kyle and Charles A. Wilson are no longer members of Jefferson County Society.

Alfred H. Catterall, Daniel H. Jenkins, William P. Kennedy, John T. McGrath, George Merriman, Samuel H. Voorhees and Frank J. Wagner are no longer members of Lackawanna County Society.

Charles M. Adams, J. Frank Fleming and Ferdinand E. Weddigen are no longer members of Lycoming County Society.

Harry T. Leibert is no longer a member of Northampton County Society.

Joseph E. Bogar and L. Edgar Schock are no longer members of Northumberland County Society.

William Howe, William J. McGranor and Wolsey B. Potter are no longer members of Potter County Society.

Jonathan C. Biddle, Benjamin C. Gulden, William J. Monaghan, Patrick H. O'Hara, Clifton Robbins and Newton H. Stein are no longer members of Schuylkill County Society.

Marcellus Baker is no longer a member of Somerset County Society.

Arthur M. Greenfield and David A. Patterson are no longer members of Tioga County Society.

Forest J. Bovard, Charles H. Brown, Clarence W. Coulter, James D. Blair, Elmer L. Dickey, Harry P. Hammond, Harry E. Kirschner, Edwin W. Rhea and John C. Wilkins are no longer members of Venango County Society.

Seth I. Cadwallader has removed from Warren County and is no longer a member of that society.

Raleigh C. Farquhar, James H. Shannon and Joseph M. Timmons are no longer members of Washington County Society.

George E. Voigt is no longer a member of Wayne County Society.

Marion L. Ross has removed from Kaylor to West Chester.

Charles N. Burkhardt has removed from Blooming Glen to Chalfont.

Wilson S. Erdman has removed from Richlandtown to Quakertown.

Eben R. Ingraham has removed from Uniontown to Masontown.

George B. Hopwood has removed from Uniontown to Smock.

W. Hudson Hopwood has removed from Smock to Grindstone.

Ralph Steans has removed from Zellwood, Florida, to Lewisburg.

J. Thompson Schell has removed to 1832 Diamond Street, Philadelphia.

Present membership 4805. S.

State News Items.

DIED.

Dr. Philip B. Cook (Miami Medical School) recently, in LeRaysville, aged 76.

Dr. Benjamin C. Hopkins (Jefferson Med. Coll., '85) in Scranton, July 22, aged 78.

Dr. Paul E. Weltmer of Reading, shot himself and died instantly, August 15, aged 30.

Dr. Frank Leslie Hazlett (Jefferson Med. Coll., '03) of Butler, July 20, near Parker, aged 29.

Dr. Joseph W. Brooks (Univ. of Pennsylvania, '84) in Philadelphia, August 5, from uremia, aged 51.

Dr. Edward T. Bradley (Univ. of Pennsylvania, '87) in Gallitzin, July 18, from tuberculosis, aged 42.

Dr. John Paxon (Univ. of Pennsylvania, '69) in Newtown, June 3, from cerebral hemorrhage, aged 65.

Dr. Milton S. Richards (Jefferson Med. Coll., '67) in Maxatawney, August 24, after a lingering illness, aged 64.

Dr. Lucien Banks (Univ. of Pennsylvania, '67) of Mifflintown, at the home of his nephew in that city, August 3, from disease of the stomach, aged 66.

Dr. J. W. Beck (Medico-Chirurgical Coll., '87) in Peckville, August 15, from the result of a scratch from a piece of brass five days before, aged 60.

Dr. James Henry Jones (Kentucky School of Med., '84) in South Fork, May 26, from pleuropneumonia, following the fracture of a leg several weeks before.

The wife of Dr. John W. Bowman, state representative from Cumberland County, in LeMoyne, August 20, having accidentally poisoned herself by taking corrosive sublimate in mistake for medicine.

Dr. Philip Dinsmore (Baltimore Univ. School of Med., '87) of Deep Valley, aged 53 years, and three other members of his family lost their lives last month from eating toadstools which they mistook for mushrooms.

MARRIED.

Dr. James B. Shively, Shippensburg, and Miss Nellie B. Caldwell, Pittsburg, July 31.

ITEMS.

Pittsburg is to have a new marine hospital to accommodate forty patients.

The Sewickley Hospital, erected at a cost of $60,000, was dedicated July 20.

Dr. Mary M. Wolfe, Norristown state hospital, sailed for Europe, August 17.

Pottsville physicians have decided not to continue to treat individuals who are able to pay unless they do pay.

Dr. Newton S. Rice, Durham, has relinquished practice on account of failing health and removed to British America.

Dr. Victor J. Gangeware, Pleasant Valley, has purchased the home and good will of Dr. Robert B. Klotz, Rittersville.

Dr. Benjamin Holbrook, Coatesville, has been sentenced to five years in the Eastern Penitentiary for numerous robberies.

Dr. George A. Riker (Jefferson Med. Coll., 1905) is one of the newly appointed physicians at the state hospital in Warren.

The White Haven Sanatorium has concluded to accept the appropriation granted by the last legislature and has again opened its free patient list.

The Woman's Medical College has completed plans for the erection on North College Avenue of a new fireproof administration and ward building with a clinical amphitheater.

Ridgway has ninety cases of typhoid fever, twelve cases of cerebrospinal meningitis, and sixteen cases of infantile paralysis. A case of typhoid on the watershed was the source of the typhoid infection.

A Conference on Medical Legislation has been called for Monday, September 23, at 2:30 P. M., in Room 3, Rajah Temple, Reading. Members interested are invited to be present and participate in the discussion.

Drs. Lawrence F. Flick, Joseph Walsh and D. J. McCarthy, Philadelphia, sailed from New York, August 29, to attend the International Congress for the Study and Suppression of Tuberculosis to be held in Vienna, September 19.

Dr. Rein K. Hartzell, Allentown, member of the legislature, was seriously injured August 19, by being thrown from an automobile. One machine had passed his automobile causing a cloud of dust when a second machine ran directly into the car.

Communication.

THE NEED OF A NEW MEDICAL LAW.

To the Editor:—May I ask the use of your columns to present some thoughts which have come to me recently when considering the relations of the public and the medical profession.

As citizens, we physicians are concerned only with protecting the public from ignorance and fraud. We have no concern with medical beliefs or any tradesunion-like protection of our own business.

The choice of a doctor by the public should be as free and undisputed as the choice of one's religion or politics.

Physician-citizens, having a special knowledge of the dangers of disease, are constrained by love of mankind and by patriotism to use that knowledge to prevent the untrained and unthinking portion of the public from suffering loss of health or money, at the hands of ignorant or fraudulent pretenders.

A medical practice law embodies the principles of the police power of the state. It is not intended to limit the number of doctors or to regulate the kinds of practice that shall be allowed to flourish. It is to preclude a person ignorant of obstetrics, for example, from practicing as a midwife and endangering the lives of women and infants, in the same manner as another law endeavors to prevent adulterated or tainted food being sold as wholesome. It is to prevent ignorant manipulators posing as trained and skilled masseurs, and to make it impossible for half educated nurses to undertake the responsibilities and duties properly assumed only by experienced graduates of training schools for nurses.

Physicians, knowing the dangers of childbed fever, the harm of massage in tuberculous disease of joints, the deaths that have occurred from unskilled nursing and the grave errors that doctors may make, should join with all other good citizens in advocating laws to regulate the practice of nursing, massage, midwifery, osteopathy, homeopathy and all other forms of medicine by establishing a standard of knowledge and by issuing licenses.

At the present time the medical colleges of Pennsylvania have a much better course of instruction than they had fifteen years ago. Hence, one may in the main be satisfied with the requirements now demanded preliminary to the study of medicine and with the educational standards now established by the Medical Council of Pennsylvania and its three subordinate boards of medical examiners for license to practice medicine.

The educational qualifications for medical practice, therefore, need not be raised much, if any, above those now required by the Medical Act of 1893. It is time, however, to revise that law to meet present conditions.

The law of 1893 makes no provision for examining and licensing those practicing midwifery alone, none for those practicing osteopathy alone, none for those practicing Christian science alone, none for those thoroughly qualified to be called registered graduate nurses. It does not provide properly for the licensing of even highly educated and experienced physicians, who move into Pennsylvania after having been licensed in other states.

In view of these obvious facts it would seem that all who are interested in medical matters, should combine to urge upon the next legislature such necessary revision of the present law as will give the public adequate protection from medical ignorance, incompetency and fraud.

John B. Roberts.

Philadelphia, August 10, 1907.

Reports of County Societies.

BUCKS—August.

The regular meeting of the Bucks County Medical Society was held at Menlo Park, Perkasie, August 14, in the form of an annual assembly, to give the wives an opportunity to enjoy with the members and friends, this feast of the heart, mind and body; to promote a closer bond of unity between physicians, through social intercourse, and likewise, to bring the press, law, pharmacy, theology and medicine into closer fellowship and to teach each profession that a closer relationship will be mutually advantageous.

The opening session was held under the trees and was called to order by the presdent, Dr. John B. Carrell of Hatboro, with a few appropriate words of welcome. He then introduced Dr. William L. Estes of St. Luke's Hospital, South Bethlehem, who spoke on "The Modern Doctrine of Prevention." Dr. Israel Cleaver of Reading, then presented "The Work of the County Medical Inspector." Dr. Oliver C. Heffner of Pottstown, president of the Montgomery County Medical Society, spoke on "What Our Society Is Doing and Should Do." He particularly emphasized the need and value of organization. By request of the president, Drs. Wilmer Krusen and Albert M. Eaton of Philadelphia and Dr. Edgar M. Green of Easton, responded with remarks upon the benefits of medical organization and the sociological side of the profession.

At this period, the dinner was announced and all assembled in the large banqueting pavilion. An invocation was offered by Rev. J. H. Waidelich of Sellersville. This was followed by a talk on "The Doctor's Wife; Her Part in the Practice of Medicine," by Mrs. E. S. Coburn of Plumsteadville. As a toast, "The Doctor's Fees," was appropriately discussed by Dr. Nathaniel C. E. Guth of Allentown, president of the Lehigh County Medical Society. Dr. Joseph B. Walter of Solebury recited an original poem, written for this particular occasion, a tribute to "The Doctor's Wife." The versatility of Dr. Walter was shown a moment later when a much appreciated vocal solo "I Love But Thee," written by him some years ago and dedicated to Mrs. Walter, was sung. Prof. Samuel Wolfe of Philadelphia responded happily to the toast "The Country Doctor and the City Doctor" and M. M. Osborne, Ph.G., of Elkin's Park, to "The Druggist and the Doctor." Brief responses were offered to the toasts "The Press and the Doctor," by Mr. Elmer E. Althouse of Sellersville; "The Millennium in Medicine," by Dr. William H. Hartzell of Allentown, ex-president of the state medical society; "The Lawyer and the Doctor," by Harry E. Grim, Esq., of Perkasie and "Get Together and Stick Together," by Dr. Irvin H. Hartman of Reading, president of the Berks County Medical Society.

After the banquet the time was spent in social pleasures. It was an ideal day for this festal occasion. This was the largest and most successful meeting in the history of the Bucks County Medical Society: evidencing what an active and earnest president can accomplish. Ninety-four physicians registered their presence; together with their wives and guests there were one hundred and forty-eight persons seated at the banquet.

Anthony F. Myers, Reporter.

DELAWARE—April, May.

The Delaware County Medical Society held its regular meeting at the Imperial Hotel, Chester, April 11, upon the invitation of Dr. S. R. Crothers. The president occupied the chair and the following members were in attendance: Drs. Baker, Bird, Bryant, S. R. Crothers, Dickeson, W. K. Evans, Forwood, Fussell, Gottschalk, Gray, Harbridge, Jefferis, Kalbach, Loughead, Maison, Martin, Matlack, Neufeld, Partridge, Risley, Shortledge, and Stiteler.

The committee on legislature made a verbal report.

Dr. Harry C. Donahoo of Chester was proposed for membership.

Dr. de Schweinitz lectured concerning the defects of vision, the result of certain drugs, drug habits, and occupations, and divided his remarks as follows: (1) Visual disturbances which arise in the course of the administration of certain drugs for medicinal purposes; (2) visual disturbances which result from certain drug habits; (3) visual disturbances to which the workers in certain chemicals are subject.

Under the first heading quinin amaurosis was discussed (since this occurs in the form of a temporary amblyopia due to idiosyncrasy of the patient toward the drug) as an acute amaurosis of the ordinary type ending in recovery, as a relapsing amaurosis, and finally, as a permanent amaurosis. It was pointed out that while usually large doses were required to produce the blindness, occasionally very small doses, even as low as fifteen grains, had resulted in temporary amblyopia. It was shown that the amaurosis depends upon an action, either directly or indirectly, of this drug upon the ganglion cells of the retina, which in severe cases is followed by an ascending atrophy of the optic nerve.

Similar but less marked forms of amaurosis occur after the administration of the salicylic acid, antifebrin, antipyrin, and salicin. Iodoform amblyopia was discussed, particularly as it occurs after the administration of the drug in pulmonary phthisis and its use as a dressing in surgical diseases. The dangers which surround the administration of filix mas were discussed and the form of amblyopia, which may occur with this drug when used as an anthelmintic was described. It seems to have the power in toxic doses of destroying the inner nuclear layer, and the layer of ganglion cells of the retina, and also of producing an intense parenchymatous retrobulbar neuritis. The danger to eyesight of the administration of thyroid extract when used to reduce obesity was also described.

The most common amblyopias which occur from the result of drug habits are those which follow the excessive use of alcohol and tobacco in the form of the so-called intoxication amblyopia, with its prominent symptom of blurred vision and the formation of a relative color scotoma, which also probably depends upon the action of the drug, either upon the ganglion cells themselves, or upon the axis of the optic nerve. The extreme danger to eyesight, as well as to life, of methyl-alcohol was fully discussed, not only when this drug is accidentally or intentionally ingested, but when it is used in the arts in the form of Columbian spirits, and its dangers by absorption through the skin and inhalation were pointed out. Not only may it produce death, but produce rapid blindness owing to an atrophy of the optic nerve and destruction of the ganglion cells of the retina. The lesions of these various toxic amblyopias in so far as the ganglion cells are concerned were shown by means of diagrams.

Other drug amblyopias discussed were those which occur among the hashish eaters, stramonium smokers, chloral and opium users, and it was pointed out that the abuse of tea and coffee is occasionally capable of originating amblyopia. The visual disturbances of chronic lead poisoning were next pointed out, not only in so far as they produce various forms of atrophy of the optic nerve, but neuritis and neuroretinitis sometimes secondary to a nephritis; and the visual disturbances to which the workers in bisulphid of carbon and chlorid of sulphur are subject, as well as those whose occupation requires them to handle nitro and denitro-benzol, were described, also the effects of the fumes of dynamite and gelignite on the eyesight. It was urged that suitable protection should always be given to the workers under these conditions, and that stringent laws should be passed forbidding the sale of methyl-alcohol unless properly labelled as a poison.

At the close of the lecture, Dr. de Schweinitz was tendered a vote of thanks and elected an honorary member.

Then Dr. J. W. Jefferis called the attention of the society to the fact that our president, Dr. J. L. Forwood, had been in the practice of medicine for fifty years, paying him a high tribute and stating that he stood at the head of our profession in surgery, and as a testimony of the respect in which he is held by the members of the society, presented him with a loving cup in their behalf. Dr. Forwood made a suitable and happy reply in the acceptance of the cup.

At the conclusion of this formality the physicians repaired to the dining room, where a fine dinner was served, Dr. S. R. Crothers being the host.

Upon invitation of Dr. J. Norman Risley, the Delaware County Medical Society held its regular meeting at his residence in Media, May 16. The president called the meeting to order. Those present were Drs. L. Haines Crothers, Dickeson, F. J. and F. H. Evans, Fronfield, Fussell, Forwood, Gallager, Jefferis, Loughead, Maison, Makuen, McCool, Neufeld, Samuel D. and J. Norman Risley, Schoff, and Stellwagen.

After a favorable report from the censors, Dr. Harry C. Donahoo was unanimously elected a member.

Dr. D. W. Jefferis announced that the Directors of the Poor had invited our society to hold its next meeting at the Delaware County Home of Employment on June 13, to discuss the "County Care of Indigent Incurables." On motion the invitation was accepted.

Dr. Samuel D. Risley gave an interesting talk on the differential diagnosis of eyes which become red. First, eyes which become red from an irritant, foreign body, irritating gases, etc. In these cases, the eye is red, but the conjunctiva is transparent. If such cases have been improperly treated, particularly by poultices, the conjunctiva is no longer transparent, and is covered with a mucus or mucopurulent discharge and becomes catarrhal and infectious. Second, in all infectious diseases, the conjunctiva is opaque and covered with a mucopurulent discharge. The doctor fully described many of the causes of the catarrhal group, all of which are infectious. These two groups are practically painless. The doctor next described iritis,—conjunctiva clear and transparent; marked zone of infection about iris, pupils contracted, severe pain which is apt to become agonizing during the night.

Glaucoma was also described. It, like iritis, had photophobia; a marked zone about iris; agonizing pain, worse at night, but pupil is dilated, and the eyeball is as hard as marble. In the treatment of an iritis, a mydriatic like atropin, or hyoscyamin must be given. In glaucoma, never use mydriatics, but myopics, eserin by preference. If the eyeball is so hard that the solution of eserin is not absorbed, give salicylates, best in the form of aspirin, and, by means of cataract knife, allow a little of the vitreous humor to escape.

After discussion of the lecture by several of the members, the president, Dr. J. L. Forwood, reported the histories of four cases of Cesarean section, after which he gave a very interesting account of the history of the operation, following this with a detailed explanation of the technic of the operation. After this eclampsia was discussed by several of the members.

After adjournment dinner was served at the Idlewild Hotel.

E. E. Brown, Reporter.

(The report of the April and May meetings of the Delaware County Society were received August 17. As a rule the Journal publishes only such reports as are received soon after the meetings are held. These reports are accepted inasmuch as they are considered model reports.—Editor.)

WARREN—August.

A special meeting of the Warren County Medical Society was held at Dr. Ball's office, Warren, Tuesday evening, August 27, to determine a more convenient hour for the regular meetings. As several preferred an evening hour it was moved and seconded that for the remainder of the year the hour be changed to 8:30 p. m. Dr. Ball invited the society to meet at his office.

The name of Dr. Frank C. Willard was proposed for membership.

The topic of the evening was "Rheumatism and So-Called Rheumatism," and the "Treatment of Chronic Forms by Mechanotherapy." Dr. Brown opened the subject and discussion followed in which all took part. Among the so-called rheumatisms several cases of flat foot were cited. Some forms of lumbago and instances of infectious arthritis complicating scarlet fever and typhoid were mentioned. Drs. Hamilton and Frantz demonstrated the use of an electric vibrator and said this treatment helped in some cases.

A resolution was passed adopting a special form of insurance certificate.

After the serving of refreshments by Dr. Frantz, the meeting adjourned.

MARY C. CONANT, Reporter.

Reviews.

THE ABDOMINAL AND PELVIC BRAIN WITH AUTOMATIC VISCERAL GANGLIA. By Byron Robinson, B.S., M.D. Professor of Gynecology and Abdominal Surgery in the Illinois Medical College; Consulting Surgeon to the Mary Thompson Hospital for Women and Children, and Women's Hospital of Chicago. Frank T. Betz, Hammond, Ind.

This is a work on the anatomy, physiology, and pathology of the sympathetics, particularly of those of the abdomen and pelvis, the result of much earnest investigation in dissections and autopsies, supplemented by a wide gynecologic experience. The importance of reflex action in the symptomatology of disease should not be forgotten, but the statements here made seem at times too speculative for a period in which methods and results in research are closely scrutinized. Notwithstanding the author's admission that the book "does not belong to the stereotyped, systematized text-books," it seems pertinent to remark that unity, both in construction and purpose, is lacking; that, in short, the volume is really a compilation of the author's writings on divers subjects of abdominal and pelvic disease. There are, therefore, many repetitions, both in subject matter and in the illustrative plates. The stress laid on pathologic physiology in the consideration of disease is, we believe, well worthy of note.

The work is readable and interesting, and contains many suggestive ideas in diagnosis and treatment, perhaps more particularly for those who as students have been acquainted in the past with the author and his teaching.

G. J. W.

ANNUAL ANNOUNCEMENTS AND PRELIMINARY PROGRAM OF THE FIFTY-SEVENTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA TO BE HELD IN READING, SEPEMBER 23-26, 1907.

RAILROAD RATES.

The Trunk Line Association has furnished card orders for use of members and friends who wish to attend the Reading Session. The cards read: "Ticket agents of lines in Pennsylvania will sell to bearer one excursion ticket to Reading and return at the reduced fare authorized for the above meeting. Tickets to be sold September 21 to 26, good to return leaving Reading to September 28, 1907, inclusive. No excursion ticket to be sold for less than 25 cents."

The following roads will accept and honor the Trunk Line card orders: Cumberland Valley. Susquehanna and New York, Western Maryland, and the Williamsport and North Branch.

The rate authorized will in some cases be more than two cents a mile. In Philadelphia and possibly other points the same rate can be secured for a six-day excursion ticket without any card order. Members will do well to consult their local ticket agents early and then use a mileage book, a local excursion ticket or send to the secretary of the state society for a card order as will best suit their convenience.

TRAINS FOR READING.

PHILADELPHIA AND READING ROAD.

From Philadelphia, Reading Terminal.
Express: A. M. 8:36, 10:30; P. M. 1:23, 4:06, 4:35, 6:56, 11:30.
Local: A. M. 4:30, 7:21; P. M. 1:36, 4:36, 5:28.

From Norristown, DeKalb St.
Express: A. M. 9:06, 11:01; P. M. 1:57. 4:37, 7:28, 12:03 A. M.
Local: A. M. 5:08; P. M. 6:04.

From Phoenixville.
Express: A. M. 9:20, 11:19; P. M. 2:12, 4:53, 7:45, 12:18 A. M.
Local: A. M. 5:33, 8:31; P. M. 2:46, 5:38, 6:30.

From Pottstown.
Express: A. M. 9:37, 11:41; P. M. 2:33, 5:15, 8:04, 12:39 A. M.
Local: A. M. 6:00, 8:58; P. M. 3:19, 6:03, 6:53.

From Pottsville.
Express: A. M. 3:45, 7:05, 8:35, 11:13; P. M. 1:50, 7:30.
Local: A. M. 5:40. 8:50, 4:30.

From Harrisburg.
Express: A. M. 8:00, 10:30.
Local: A. M. 4:50, 6:15; P. M. 1:00, 3:45, 8:25.

From Lebanon.
Express: A. M. 8:35, 11:16.
Local: A. M. 5:40, 7:02; P. M. 1:55, 4:43, 7:22.

From Allentown.
Express: P. M. 7:35.
Local: A. M. 5:30, 8:37, 10:50; P. M. 1:40, 4:28.
From Columbia.
Local: A. M. 7:00; P. M. 12:25, 6:08.
From Lancaster Junction.
Local: A. M. 7:39; P. M. 1:04, 6:44.
From Slatington.
Local: A. M. 5:05; P. M. 3:18.
From Chadds Ford Junction.
Local: A. M. 8:23; P. M. 3:03, 5:42.
From Coatesville.
Local: A. M. 9:12; P. M. 3:49, 6:47.

PENNSYLVANIA ROAD.

From Philadelphia, Broad St.
Express: A. M. 9:10; P. M. 4:10, 5:28, 8:13, 11:50.
Local: A. M. 5:40, 10:47; P. M. 1:28.
From Norristown.
Express: A. M. 9:42; P. M. 4:40, 6:07, 8:48, 12:34 A. M.
Local: A. M. 6:21, 11:19; P. M. 2:11.
From Phoenixville.
Express: A. M. 9:58; P. M. 4:56, 6:26, 9:04, 12:58 A. M.
Local: A. M. 6:48, 11:35; P. M. 2:40.
From Pottstown.
Express: A. M. 10:20; P. M. 5:15, 6:49, 9:25, 1:19 A. M.
Local: A. M. 7:15; P. M. 12:01, 3:07, 5:25.
From Wilkes-Barre.
Express: A. M. 7:40; P. M. 4:20.
Local: A. M. 11:15.
From Pottsville.
Express: A. M. 7:00, 10:25; P. M. 2:55, 7:05.
Local: A. M. 6:00, 11:55; P. M. 5:00.

HOTELS.

The Mansion House will be considered headquarters during the Reading Session. Below is given a list of hotels with rates per day.

Mansion House, American plan	$3.00
Hotel Penn, American plan	3.00
American House, American plan	2.50
Hotel Brighter, American plan	2.50
Merchants House, American plan	2.50
United States Hotel, American plan	2.50
Highland House, American plan	2.50
Woodvale Inn, American plan	2.50
Aldine Private Boarding House, American plan	2.00
Winsor Hotel, European plan	1.00
Folgers (with café), European plan	$ .75 to 1.00
Crystal Palace, European plan,	$ .75 to 1.00

The Highland House is a summer resort, situated on Neversink Mountain, 15 minutes' ride from Ninth and Penn Streets; cars every half hour.

Woodvale Inn is on the north slope of Neversink Mountain, 15 minutes' ride from Ninth and Penn Streets; cars every half hour.

A number of cafés and restaurants are located near the place of meeting where meals will be served on the European plan.

Members in securing rooms will please communicate direct with hotels; if not satisfactory, refer the same to Dr. John F. Feick, chairman of Committee on Hotels.

POST-OFFICE.

A post-office department will be opened at Rajah Temple where members may receive their mail. Mail should be addressed in care of Medical Society of the State of Pennsylvania, Rajah Temple, Reading, Pa.

PROGRAM OF ENTERTAINMENTS FOR MEMBERS, GUESTS AND VISITING LADIES.

TUESDAY, SEPTEMBER 24, 1907.

2:30 to 4 P. M.—Reception for ladies at the Mansion House.

4 P. M.—Ride for visiting ladies over the Mt. Penn Gravity Road. (Ladies are requested to take Mineral Spring Road or Perkiomen Avenue street cars for Mt. Penn Gravity Station. Cars leave Gravity Station at 4:30 P. M.

5 P. M.—Ride for members and guests over the same route.

8:30 P. M.—Theater party at the Orpheum, Fifth Street near Washington.

WEDNESDAY, SEPTEMBER 25.

9 A. M.—Steamboat ride up the Schuylkill River for the ladies only. (Ladies are requested to meet the Ladies' Reception Committee at the Pennsylvania depot, foot of Penn Street, at 8:30 A. M.

4 P. M.—Ride for the ladies over Neversink Mountain Road to Highland House. (Ladies are requested to meet the Ladies' Reception Committee at Ninth and Penn Streets.)

5 P. M.—Ride for members and guests over the same route.

There will be a concert by the Ringold Band at the Highland House from 6 to 9 P. M., during which hours a luncheon will be served.

The Berks County Medical Society will tender a reception to the members of the Medical Society of the State of Pennsylvania, their ladies and guests at the Highland House at 8 P. M. Dancing from 9 to 11 P. M.

THURSDAY, SEPTEMBER 26.

8:45 A. M.—Visiting ladies are requested to meet the Ladies' Reception Committee at the Mansion House for a visit to the State Asylum for the Chronic Insane at Wernersville. Trolley cars leave promptly at 9 A. M.

Lack of space makes it necessary to omit details and titles of papers. Most of these may be found on pages 923 to 930 of the August number. The official program will contain titles and abstracts of all papers.

MEETING OF THE TRUSTEES.

ROOM 4, SECOND FLOOR, REAR OF STAGE.

The Trustees will meet Monday, September 23, 1907, 7 P. M., and daily thereafter at such hours as may be determined upon.

HOUSE OF DELEGATES.

The House of Delegates will meet in Room 1, Second Floor, Monday, September 23, 1907, 8 P. M.

The House of Delegates will meet in Room 2, Third Floor, front, on Wednesday at 8:45 A. M. for the Election of Officers and the Selection of Place for next Session. Other meetings of the House will be held at hours determined by the delegates.

CONFERENCE OF SECRETARIES.

KRICK'S CAFÈ, 611 PENN STREET.

TUESDAY, SEPTEMBER 24, 5 P. M.

What Can a Secretary Do to Get New Members? JOHN J. COFFMAN, Scotland.

The Relation of the Secretary to the Society and the Profession.
ANTHONY F. MYERS, Blooming Glen.

The Young Men in the Society; How to Interest Them.
HOWARD C. FRONTZ, Huntingdon.

The Lazy Secretary and His Baneful Effect on the Society.
ERNEST U. BUCKMAN, Wilkes-Barre.

Dr. George H. Simmons, secretary of the A. M. A., Dr. C. L. Stevens and Dr. George W. Wagoner will give short talks.

PROGRAM.

GENERAL MEETING.

ROOM 1, SECOND FLOOR.

TUESDAY, SEPTEMBER 24, 1907, 10 A. M.
OPENING MEETING. PRESIDENT'S ADDRESS.

WEDNESDAY, SEPTEMBER 25, 9 A. M.
ORATIONS.

THURSDAY, SEPTEMBER 26, 2 P. M.
SYMPOSIUM: THE KIDNEY.

SPECIAL MEETING.

ROOM 1, SECOND FLOOR.

TUESDAY, SEPTEMBER 24, 7:30 P. M.

Lodge Practice, Legitimate and Illegitimate.
GEORGE E. HOLTZAPPLE, York.

Discussion opened by ALBERT M. EATON, Philadelphia.

What Stand Should the United Pennsylvania Medical Profession Take on the Reduction of Fees by Life Insurance Companies?
J. NEWTON HUNSBERGER, Skippack.

The Responsibility of Medical Schools for Intellectual and Professional Inferiority of Their Graduates, for Failure to Instruct Students in the Business Side of Their Profession, and for Neglect to Urge Graduates to Join Their County Societies and Otherwise Advance Organization of Our Ranks. HENRY BEATES, JR., Philadelphia.

The Harm to Both Public and Physician of the Erroneous Principles of State Aid to Local Hospitals.
JOSEPH PRICE, Philadelphia.

SECTION ON MEDICINE.

Chairman—JOHN A. LICHTY, 4634 Fifth Ave., Pittsburg.

Secretary—H. HERBERT HERBST, Allentown.

Executive Committee—LAWRENCE LITCHFIELD, JOHN A. LICHTY, Pittsburg, and JAMES H. MCKEE, Philadelphia.

ROOM 1, SECOND FLOOR.

TUESDAY, SEPTEMBER 24, 2 P. M.

WEDNESDAY, SEPTEMBER 25, 9 A. M.
(See Program for General Meeting.)

WEDNESDAY, SEPTEMBER 25, 2 P. M.
Report of Executive Committee.
Election of Section Officers.

THURSDAY, SEPTEMBER 26, 9 A. M.

SECTION ON SURGERY.

Chairman—JOHN H. GIBBON, 1608 Spruce St., Philadelphia.

Secretary—CHARLES P. STAHR, 17 East Walnut St., Lancaster.

Executive Committee—WILLIAM L. ESTES, South Bethlehem; JOHN H. GIBBON, Philadelphia; GEORGE W. GUTHRIE, Wilkes-Barre.

ROOM 2, THIRD FLOOR FRONT.

TUESDAY, SEPTEMBER 24, 2 P. M.

WEDNESDAY, SEPTEMBER 25, 9 A. M.
(See program for General Meeting.)

WEDNESDAY, SEPTEMBER 25, 2 P. M.
Report of Executive Committee.
Election of Section Officers.

THURSDAY, SEPTEMBER 26, 9 A. M.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

Chairman—LEWIS H. TAYLOR, 83 South Franklin St., Wilkes-Barre.

Secretary—ROBERT MILLIGAN, Westinghouse Building, Pittsburg.

Executive Committee—SAMUEL D. RISLEY, Philadelphia; LEWIS H. TAYLOR, Wilkes-Barre; and ROBERT MILLIGAN, Pittsburg.

ROOM 3, SECOND FLOOR FRONT.

TUESDAY, SEPTEMBER 24, 2 P. M.
SYMPOSIUM: HEADACHE.

WEDNESDAY, SEPTEMBER 25, 9 A. M.
(See Program for General Meeting.)

WEDNESDAY, SEPTEMBER 25, 2 P. M.
Report of Executive Committee.
Election of Section Officers.
EAR PAPERS.
NOSE AND THROAT PAPERS.

THURSDAY, SEPTEMBER 26, 9 A. M.
EYE PAPERS.

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